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# CATALOGUE

OF

RARE OR REMARKABLE

# PHÆNOGAMOUS PLANTS,

COLLECTED IN

# SOUTH KENT:

WITH

DESCRIPTIVE NOTICES AND OBSERVATIONS.

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PUBLISHED BY LONGMAN, REES, ORME, BROWN AND GREEN,

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1829.

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## DESCRIPTIVE NOTICES AND OBSERVATIONS.

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BY

GERARD EDWARDS SMITH,

*Of St. John's College, Oxford.*


---

" Let us ourselves examine things, and converse with Nature as well as books. Let us endeavour to promote and diffuse this knowledge." RAY.

" When Nature has perfected her seeds, her next care is to disperse them. The seed cannot answer its purpose, while it remains confined in the capsule." PALEY.

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TO THE

# REVEREND RALPH PRICE,

RECTOR OF LYMINGE AND PADDLESWORTH, KENT,

AN ASSIDUOUS AND SUCCESSFUL PRACTICAL BOTANIST,

AS A MARK OF ESTEEM,

AND OF GRATITUDE FOR HIS KINDNESS,

AND FOR ADVANTAGES ENJOYED

THROUGH HIS UNWEARIED ZEAL AND FRIENDSHIP,

THESE OBSERVATIONS, THE EARLIEST RECORD OF BOTANICAL

STUDIES,

EXTENDED BY HIS EXAMPLE, AND ENRICHED BY HIS LABORS,

ARE HUMBLY DEDICATED,

BY HIS FAITHFUL AND DEVOTED FRIEND,

THE AUTHOR.

Sandgate, February 1829.

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THESE

James

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Christian Oeder.

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*in the Annales du Museum, Volume*

Caspar Bauhin.

*London,* 1667, Merrett.

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The references in this Catalogue are, in general, to English Flora, the immortal work of Sir James Edward Smith. The subjoined list notices the principal works quoted to illustrate, not merely adorn, the mention of doubtful or remarkable Plants.

The abbreviations used are few. Those annexed to the reference to each plant, represent its physical duration and period of flowering. They are—p. *perennial;* b. *biennial;* a. *annual;* t. *tree;* s. *shrub.* The months in their order, commencing with January, are expressed by numbers.

The term *drusy* is once used. In Mineralogy, it expresses a superficial, *velvet-like,* investment of minute crystals. I have applied it to the *stigma* of *Orobanche caryophyllacea.*

Darnley Vale is the continuation of the diluvial sinus extending from Sandgate northwards, through the Green Sand, towards Cheriton Street. A small stream locally styled "the River En." rises at its head, passes through Lord Darnley's grounds, and falls into the sea near the Castle.

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# Class I. MONANDRIA.

## Order I. *MONOGYNIA.*

SALICORNIA. Jointed Glasswort.

Marsh Sampire, *herbacea*, E. F. n. 1. 1.—a. 8, 9.
procumbent, *procumbens*, 2.—a. 8.
creeping, *radicans*, 3.—p. 9.
} muddy sea-shores, and sands.

shrubby, *fruticosa*, 4.—p. 8, 9. Pegwell Bay, and Sandwich Haven.

CHARA.

prickly, *hispida*, E. F. n. 4. 2.—a. 7, 8. Still streams and ponds. Very large in dykes at Ham ponds; small and tufted in ponds in Eastwear Bay, and below the Folkstone chalk-range.

proliferous, *nidifica*, E. F. n. 4. 5.—a. 7, 8. With Zannichellia, in dykes near the sea, at Dimchurch.

CALLITRICHE. Water Starwort.

autumnal, *autumnalis*, E. F. n. 5. 2.—a. 6, 10. In dykes: at Ham ponds and Lydd. In the stream at Seabrooke.

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# Class II. DIANDRIA.

## Order 1. *MONOGYNIA.*

CIRCÆA. Enchanter's Nightshade.

common, *lutetiana*, E. F. n. 8. 1.—p. 5, 8. With white flowers, in the lane leading from the Camp ground towards the Tile-kiln. This plant, with Mercurialis perennis, three species of Salix, Rosa canina and rubiginosa, the monthly Provence, Bishop, and Frankfort, roses in gardens, Fragaria sterilis, &c. is used in the construction of cells by the various Leaf-cutter Bees. The plants of Circæa, destitute of flowers, are usually preferred.



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VERONICA. Speedwell.

water, *Anagallis*, E. F. n. 9. 8.—p. 7. Rare. In a pond by the road-side, at Cheriton Street.

narrow leaved, *scutellata*, E. F. n. 9. 9.—p. 6, 8. Wood near Sandling Lodge, Mr. William Hutchinson. On the shore of the Baptists pond, at Braybourn Lees. Willesboro' Leas. Ham ponds, &c.

mountain Germander, *montana*, E. F. n. 9. 13.—p. 5, 6. Upon the chalk, and in thickets stretching beneath it.

UTRICULARIA. Hooded Milfoil.

greater, *vulgaris*, E. F. n. 11. 1.—p. 7. In dykes at Ham ponds, frequent, associated with the elegant Hottonia, and Alisma ranunculoides.

CLADIUM. Twig-rush.

prickly, *mariscus*, E. F. n. 15. 1.—p. 7, 8. On boggy ground below the chalk-pit, one mile and a half from Sandwich, towards Deal: finest by the side of dykes: upon the less boggy spots producing no panicle.

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## Order II. *DIGYNIA.*

ANTHOXANTHUM. Vernal-grass.

sweet-scented, *odoratum*, E. F. n. 16. 1.—p. 5, 8. The newly expanded flowers of this grass emit a very pleasant scent of sweet musk; when dried, its stem and leaves spread the well-known perfume through hay. We seek in vain a fairer emblem of virtue, which in youth breathes a grateful incense from the eye and the voice, and pleases still in age, when early beauty is faded, diffusing the sweets and uses of chaste society through every class and condition.

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# Class III. TRIANDRIA.

## Order I. *MONOGYNIA.*

VALERIANA. Valerian.

small marsh, *dioica*, E. F. n. 17. 2.—p. 5. Darnley Vale. Low ground at Cheriton. Newington Moor, &c.

great wild, *officinalis*, E. F. n. 17. 3.—p. 6. Collected by Mr. Charles Fagg, at Gyminge Brook: upon Newington Moor, abundantly.

FEDIA. Corn-salad.

oval fruited, *dentata*, E. F. n. 18. 2.—a. 6, 7. Upon the chalk above the Cherry-garden, &c. Corn-fields above Postling; Mr. William Hutchinson.

IRIS. Flower-de-luce.

fœtid, *fœtidissima*, E. F. n. 21. 2.—p. 6. Rare inland. Abundant along the cliff-coast, striking inland, with the high ground upon the border of the Marsh, two miles west of Hythe.

CYPERUS. Galingale.

sweet, *longus*, E. F. n. 24. 1.—p. 9. This rare and very elegant Grass is spread over a confined, black, boggy tract at Whiting Brooks, above the Warren, near Seabrooke. Ascending one day the unpromising Warren-hills, I reflected, that to a Botanist no tract was devoid of charms, and that the least attractive most frequently yielded him treasures. A small, but picturesque, wood, rose as I ascended the hill's brow; and at the angle of a copse, I perceived the tall and graceful Cyperus, spreading around its slender branches tufted with chestnut spikelets, like a delicate exotic, or miniature palm, wandering from its native clime, to adorn this secluded spot. Upon penetrating the copse, I arrived at its upper part, where the soil is moist and deep, and indicates the commencement of a shallow bed of clay. Among some scattered hazels, a plant of Angelica sylvestris rose to the remarkable height of ten feet; the span of the lowest leaf was a few inches less than

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CYPERUS. Galingale.

four feet. I shall hereafter have occasion to speak of the giant size of many plants observed in this district, which is marked by the early flowering of nearly all its tribes, as well as by their developement. Primula veris remains long in flower upon the high chalk downs. I have gathered it with Euphrasia. Helleborus viridis flowered at Postling as early as the 22d of February; Ophrys fucifera before the 20th of March. The first flowers of O. arachnites and apifera were collected in 1827, upon the 15th of May. It is necessary to note accurately the state in which plants are found at the date of their examination: this plan pursued generally, and for a few seasons, would present a nicely graduated table of æstivation, even in latitudes of inconsiderable difference.

It is remarkable, that upon the open parts, Cyperus flourishes only beneath the shelter of trees, especially around their trunks. Its period of flowering, the spikes very slowly advancing to perfection, is considerably later than the period stated in the English Flora.

SCIRPUS. Bull-rush or Club-rush.

scaly-stalked, *cæspitosus*, E. F. n. 25. 1.—p. 7. Willesboro' Leas.

true Bull-rush, *lacustris*, E. F. n. 25. 4.—p. 7. More rare in this quarter, than the larger species, S. carinatus. It occurs in a pond, Eastwear Bay east; at Ham ponds; and in dykes near Sandwich.

bristle-stalked, *setaceus*, E. F. n. 25. 7.—a. 7, 8. This elegant species occurs in muddy rills, upon the chalk: and, in the vale running to Beachboro' from Cheriton, it clothes thickly the east bank, where Valeriana officinalis, and Carex paniculata, first appear; and where also the Ranunculus radicans, a variety of R. flammula, occurs; a locality promising Equisetum sylvaticum, which I have in vain sought elsewhere. Scirpus setaceus varies much in the number of its aggregate spikes; four, and

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SCIRPUS. Bull-rush or Club-rush.

and occasionally one only, decorating the bristle-like stem.

blunt-edged club-rush, *carinatus*, E. F. n. 25. 11.—p. 7, 8. In dykes at Lydd, Ham ponds, and Sandwich. In ponds in Eastwear Bay. This is the Rush imported from Holland for chair-mending, a fact of which I satisfied myself by frequent inspections of the bundles carried by the original professors of the art. From its thickness it is far preferable to S. lacustris for matting and coarse work: S. lacustris is a more slender plant, with a more simple panicle, the spikes occurring in pairs, with an intermediate one.

salt-marsh club-rush, *maritimus*, E. F. n. 25. 12.—p. 6, 7, 8. In dykes, near or distant from the coast, connected with the sea by tide or inundation.

*α*. Gramen cyperoides palustre, paniculâ sparsâ, *Ray Syn.* p. 425. Panicled, cylindrical-spiked, Sea Club-rush. In the Military Canal. Upon sandy ground, once probably marshy, near the turnpike on the New Road to Folkstone.—*Morison, Hist. Univ.* v. iii. 238. sect. 8. t. 11. f. 25.

*β*. Cyperus rotundus littoreus inodorus. *Ray. Syn.* p. 426. Tufted, sessile-headed, Sea Club-rush. Spikes nearly globose, in a dyke by the road-side, Dimchurch, East. Spikes small, ovate, and numerous, in dykes at New Romney.—The roots of this variety are frequently tuberous. *Morison, Hist. Univ.* v. iii. 236, sect. 8. t. 11. f. 9.

*γ*. Cyperus repens radice longâ, unicoque capite. *Ray. Syn. Ind. Pl. Dub.* Single-headed, dwarf, Sea Club-rush: S. maritimus in a young state. "Between Sandwich and Deal." *Merrett, Pinax.* With the former varieties.

The various plants assigned to this species deserve the closest examination.

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SCIRPUS. Bull-rush or Club-rush.

wood club-rush, *sylvaticus*, E. F. n. 25. 13.—p. 6, 7. By the Mill-stream in the copse upon Newington Moor. In the Trout-stream at Harrietsham.

NARDUS. Mat Grass.

common, *strictus*, E. F. n. 28. 1.—p. 6, 7. Upon the dry parts of Willesboro' Leas, Hothfield Heath, &c.

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Order II. *DIGYNIA.*

AGROSTIS. Bent Grass.

fine, *vulgaris*, E. F. n. 35. 4.—p. 7, 8.
Var. δ. Upon Willesboro' Leas. Mr. William Hutchinson.

AIRA. Hair Grass.

wavy mountain, *flexuosa*, E. F. n. 39. 5.—p. 6, 7. With Poa alpina, upon the high sandy ground, above Shorne Cliff.

grey, *canescens*, E. F. n. 39. 6.—p. 7. Upon the chalk, between Folkstone and Dover.

MELICA. Melic Grass.

purple, *cærulea*, E. F. n. 42. 3.—p. 7. Upon Willesboro' Leas; on a confined bog behind Beachboro'.

GLYCERIA. Sweet Grass.

floating, *fluitans*, E. F. n. 44. 2.—p. 6, 8. This plant, as well as Arundo arenaria, and Avena flavescens, occurs infected by the fungous disease called Ergot. Arundo arenaria, upon the Warren at New Romney, is frequently thus infected. P. fluitans with the Ergot, was collected in a pond behind Cheriton Street.

reflexed, *distans*, E. F. n. 44. 3.—p. 6, 7. Very abundant within reach of the sea-water at Dimchurch, Lydd, &c. "At Lydden Spout." Mr. Dillwyn in Bot. Guide.

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POA. Meadow Grass.

glaucous, *glauca*, E. F. n. 45. 8.—p. 8. By the side of a dyke running East, half a mile from Sandwich, towards Pegwell, and near the plantation.

TRIODIA. Heath Grass.

decumbent, *decumbens*, E. F. n. 46. 1.—p. 7. Willesboro' Leas. Moist ground behind Shorne Cliff.

CYNOSURUS. Dog's Tail Grass.

rough, *echinatus*, E. F. n. 50. 2.—a. 7. Said to have been found near Dover. C. cristatus is extremely prevalent inland upon the chalk. Two distinct varieties occur; one with a purple, the other with a pale green, spike.

FESTUCA. Fescue-Grass.

spiked, *pinnata*, E. F. n. 51. 14.—p. 6, 7. This grass frequently presents a double row of spikelets. Upon Shorne Cliff, it rises to a great height, and is a very graceful species.

BROMUS. Brome Grass.

upright annual, *diandrus*, E. F. n. 52. 10.—a. 7. Frequent upon dry, sandy, ground.

ARUNDO. Reed.

wood, *epigejos*, E. F. n. 56. 2.—p. 7. In the wood west of the Cherry Garden.

LOLIUM. Darnel.

short-awned annual, *arvense*, E. F. n. 57. 3.—a. 6, 7. In corn-fields, at Cheriton and Coolinge, rising among the wheat to the height of four feet, and presenting a large and handsome spike. Inland it becomes a troublesome weed, the grain it yields being with difficulty separated from the wheat.

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ROTBOLLIA. Hard Grass.

sea, *incurvata*, E. F. n. 58. 1.—a. 7, 8. Upon the shore, and in dry salt marshes at Dimchurch: upon the shore, Folkstone West. The plant with an elongated nearly straight stem and spike, usually stained with purple, the "R. filiformis of Don H. Br. 178," occurs abundantly with the R. incurvata, which exhibits a very different habit, and besides its obvious, pale green, color, is remarkably and deeply striated. Whether or no these are distinct species, from my want of experience in this tribe, I cannot at present decide.

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Order III. *TRIGYNIA.*

MONTIA. Small Water Purslane.

*fontana*, E. F. n. 62. 1.—a. 4, 5. In slow rills and in the bays of streams.

procumbent, β. cæspitosa.—a. 3, 4. "In fields it is prostrate, creeps along and flowers earlier." *Ray, Syn.* 352. With axillary flowers, on the turf near the Boat House, Sandgate East. *Vaill. Bot. Paris, t.* 3. *f.* 4.—*Micheli. gen.* 18. *t.* 13. *f.* 2.

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## Class IV. TETRANDRIA.

Order I. *MONOGYNIA.*

DIPSACUS. Teasel.

Shepherd's Staff, *pilosus*, E. F. n. 65. 3.—b. 7, 8. In the wood by the road-side, one mile north of Ashford: also to the left, in a hedge, between Charing and Lenham: collected by the Rev. Ralph Price, of Lyminge, who also pointed

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DIPSACUS. Teasel.

out to me Vicia sylvatica. Both plants are observed in midland countries, but are not recorded as occurring so far south.

ASPERULA. Woodruff.

sweet, *odorata*, E. F. n. 68. 1.—p. 5. Frequent in moist woods. A. cynanchica, the unrivalled beauty of the turf, is rarely found to stray from the Chalk Downs.

RUBIA. Madder.

wild, *peregrina*, E. F. n. 70. 1.—p. 6. Among low bushes, east and west of Lydden Spout; a locality recorded by *Mr. Dillwyn in Bot. Guide.*

CENTUNCULUS. Chaffweed.

small, *minimus*, E. F. n. 73. 1.—a. 5, 6. Upon Brabourne, Hothfield, and Willesboro' Leas.

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## Order IV. *TETRAGYNIA.*

RUPPIA. Tassel Pond Weed.

sea, *maritima*, E. F. n. 82. 1.—p. 6, 7. Dykes and pools near the sea at Dimchurch.

The history of this singular aquatic plant has thrown no slight interest over all that has been written or recorded upon the subject. In the last week in July, I went in quest of Ruppia, and discovered it very favorably placed for study, in a narrow dyke, about a hundred yards from the Semaphore at Dimchurch. The dyke was filled with the plant, and I was surprised to observe pollen scattered over the surface of the water, and small yellow spikes of flowers rising above its level: many of these had discharged their pollen; in a few,



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RUPPIA. Tassel Pond Weed.

the elevated anthers were yet entire. Having previously read Sir James Smith's observations upon the economy of this plant, in which he retracts his opinion respecting the *emersion* of the anthers before the impregnation of the style, and coincides with Dr. Hooker's assertion, that the impregnation takes place *beneath* the water and *within* the sheath of the leaves, before the flower-stalks are elongated, I was at a loss to reconcile this change of opinion with the facts before me. To what end, I asked myself, are the flower-stalks thus universally elongated before the anthers have burst, unless to fulfil that economy, which provides for the presence of atmospheric air in the natural process of fecondation of the seeds. I waded into the dyke to prove Professor Hooker right in some one instance; not one could I detect. Many spikes were yet immersed, their anthers entire, though the flower-stalk had quitted the sheath. The anthers are vesicular and buoyant; as they swell and become mature, the membranous sheath enclosing them is distended, and the whole is brought to the surface of the water. The flower-stalks are rapidly lengthened; the flowers quit the sheath, which then becomes a bladder, and aids the elevation of the spike an inch above the water. Presently the anthers burst, the vesicle loses its buoyancy, and the flower-stalk, bearing the fertilized stigmas, sinks within the bosom of its parent plant.

M. Achille Richard, in his Nouveaux Elémens de Botanique, thus concisely describes this process:—

" Un grand nombre de plantes aquatiques, tels que les
" nymphæa, les villarsia, les menyanthes, etc., ont
" d'abord les boutons de leurs fleurs cachés sous l'eau;
" petit à petit on les voit se rapprocher de la surface;
" s'y montrer, s'épanouir, et quand la fécondation s'est
" operée, redescendre au-dessous de l'eau, pour y

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RUPPIA. Tassel Pond Weed.

" mûrir leurs fruits." p. 222. Among the exceptions to the almost universal rule, of fecondation in contact with the air, M. Richard places Zostera, Zannichellia, and *Ruppia*. Exposed as Ruppia from its situation must ever be to sudden inundation, it is not impossible that, surrounded by air within the sheath, the anthers might burst, and the stigmas under such circumstances, imbibe the pollen, and yield perfect seeds. Or can we suspect the existence of two species?

This question must remain for the present in uncertainty. After a careful examination of the characters of Dr. Hooker's plant from Yarmouth, compared with my own specimens, and Ray's description, which, though mistaken upon some points, is accurate upon the particulars in question, I conclude that the difficulty is the result of accident; that Sir James E. Smith adopted Dr. Hooker's opinion without sufficient grounds; and without perceiving, that this change of opinion affected the fidelity of his most vigilant and accurate predecessors.

The variations in floral character to which this plant is liable, are not sufficiently considered by either of the above Botanists. I regret to gather a weed from the illustrious monument Smith has raised to his own memory: he would, however, have praised the act himself. The stigmas are rarely four only, though four or six are usually most prominent: Ray mentions three, or four: in his plate he represents *three* stigmas, but *five* seeds in the adjoining figure. Dr. Hooker states the number as four: Sir James E. Smith, four or five. Whether or not fecondation, by absorption of moist pollen, does take place beneath the water, or only above it—that is, whether the same plant and pollen admit of fecondation immersed as well as emersed—whether the pollen *absolutely requires or not* the influ-



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RUPPIA. Tassel Pond Weed.

ence of atmospheric air to effect the vegetating power in the seeds, are questions to be answered by the study of facts. Even in a basin the spadix lengthened itself, quitted the sheath, and raised the flowers above the water. Do the *seeds* really "rise above the water to ripen?" Their stalks are firm, and the general stalk elastic. But I have not detected the fact: Dr. Hooker allows the seeds to rise to the surface only: "I have "always observed this (the spadix) to be very short, "but when bearing capsules to be more or less length- "ened out, and spirally twisted, in order that the fruit "may be always *level with the surface of the water.*" *Flor. Lond. New Series, t.* 50. *See English Flora, n.* 82. Ruppia.

I consider this plant to be similar in the economy of the flower and fructification to Potamogeton. Its whole history is deeply interesting, and raises the humble and hidden tenant of the dyke to rivalry with the celebrated Valisneria. The pleasure resulting from such investigations the Naturalist justly calls his own: but he is glad to impart the feelings of admiration, and the conviction which they irresistibly excite.

The flower-stalks elongated before the bursting of the anthers are represented by *Micheli*, t. 35. *Ray, Synopsis*, t. 6, fig. 1, &c. See Plate 1, and its explanation.

MŒNCHIA.

upright, *erecta*, E. F. n. 84. 1.—a. 5. Upon sandy ground, east of the Castle at Sandgate.

RADIOLA. Flax-seed.

thyme-leaved, *millegrana*, E. F. n. 86. 1.—a. 6. Willesboro' and Brabourne Leas.

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# Class V. PENTANDRIA.

## Order I. *MONOGYNIA.*

MYOSOTIS. Scorpion-Grass.

great water, *palustris*, E. F. n. 87. 1.—p. 6, 7, 8. Inland, by the banks of streams and in moist meadows.—This plant attends the Stour through all its windings: its eye is always bright, and it reflects the pure blue of heaven upon its chaste petal; with humble foliage it rises modestly among the tall reeds, the Sedge and the Iris: it is "the Forget-me-not, the emblem of affection among the Germans."

variable, *versicolor*, E. F. n. 87. 7.—a. 4, 5. On sandy ground between Sandgate and Folkstone, &c.

CYNOGLOSSUM. Hound's Tongue.

wood, *sylvaticum*, E. F. n. 90. 2.—b. 6. In a hedge upon the Roman road near Stowting; the Rev. Ralph Price.

SYMPHYTUM. Comphrey.

officinal, *officinale*, E. F. n. 92. 1.—p. 6, 7. In a stream by the road-side near Elham.

BORAGO. Borage.

common, *officinalis*, E. F. n. 93. 1.—b. 5, 6, 7. With white flowers below Lymne Castle; *Mr. Dillwyn in Bot. Guide.* By the road-side Hythe east; Winchelsea, near the east gate.

HOTTONIA.

common, *palustris*, E. F. n. 100. 1.—p. 6. In pure streams and ponds. In dykes at Ham Ponds. In a pond near Honeywood Farm, abundantly; Mr. William Hutchinson.

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ANAGALLIS. Pimpernel.

blue, *cærulea*, E. F. n. 102. 2.—a. 7. In corn-fields near Lyminge and around Weston-hanger; the Rev. Ralph Price.

bog, *tenella*, E. F. n. 102. 3.—p. 6, 7. Abundant upon mossy or wet bogs and banks upon the Undercliff; at Newington, Beachboro', &c. The carpet of rosy flowers spread by this plant over many parts of the Leas at Willesboro', would arrest the most indifferent eye: it is equalled only by the beautiful Polygonum amphibium when in undisturbed enjoyment of the stream. The appearance of this last plant in the streams near Stroud in Gloucestershire, a tract abounding in rare plants, delighted me long before Botany became a study as well as a source of idle enjoyment. Who, susceptible of this pleasure, will neglect the study he has once adopted? the pleasure itself, alas! is too frequently insufficient to commend the study: yet neither the nomenclature nor the giant extent of the science is attractive. One man made smooth the way, and taught Flora to dispose her charms most winningly. Can we cease to regret the close of a life, devoted to Botany? is not the possession of his name a pride, and the praise of such a man a real glory?

CONVOLVULUS. Bindweed.

sea, *Soldanella*, E. F. n. 104. 3.—p. 6, 7. Among pebbles upon the shore at New Romney; at Lydden Spout. Upon the Sand-hills near Sandwich, abundant.

CAMPANULA. blue-bell.

corn, *hybrida*, E. F. n. 106. 9.—a. 7, 8. In corn-fields upon the Chalk and Gault; Mr. Hutchinson.

JASIONE. Sheep's-bit.

common, *montana*, E. F. n. 108. 1.—a. 6, 7. On sandy ground near Lydd and Sandwich.

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VIOLA. Violet.

hairy, *hirta*, E. F. n. 111. 1.—p. 4. In hedge-rows and thickets upon the chalk; chiefly inland.

ATROPA. Deadly Nightshade.

common, *Belladonna*, E. F. n. 115. 1.—p. 6, 7. In Pedlinge wood; Mr. George Qui-Hampton.

ERYTHRÆA. Centaury.

dwarf-branched, *pulchella*, E. F. n. 117. 4.—a. 6, 7. Upon oozing clay above the shore between Sandgate and Folkstone. Upon moist chalk between Folkstone and Lydden Spout. Upon the Plastic Clay in Pegwell Bay. Inland in corn-fields.

E. centaurium occurs in great perfection upon the Chalk Cliffs and turf east of Folkstone. Upon the green sand it is a remarkably different, spare and inelegant, plant. I do not observe any distinction but that of habit.

SAMOLUS. Brook-weed.

common, *Valerandi*, E. F. n. 118. 1.—p. 5, 6. On oozing clay with the preceding plant, Carex distans and Trifolium fragiferum, between Sandgate and Folkstone. In Eastwear Bay. On the banks of dykes in the Marsh.

RHAMNUS. Buckthorn.

Alder, *Frangula*, E. F. n. 120. 2.—s. 5. In hedges upon Willesboro' Leas.

VINCA. Periwinkle.

lesser, *minor*, E. F. n. 127. 1.—p. 4, 5. Near Lyminge. V. major occurs in a thicket above Hythe.

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## Order II. *DIGYNIA.*

CHENOPODIUM. Goose-foot.

sea, *maritimum*, E. F. n. 129. 13.—a. 6, 7, 8. On the sandy or muddy sea shore. Folkstone; Shorne Cliff; Dimchurch; Pegwell Bay.

The variety in habit exhibited by this plant is endless. From a dwarf, prostrate, tufted state, to a shrubby character, rising eighteen inches or more in height, now pale, now deeply stained with red, and this principally when in seed, specimens most unlike in form may be collected upon the same soil and aspect. I suspect this variety arises from the healthy state and developement of the roots.

CUSCUTA. Dodder.

lesser, *Epithymum*, E. F. n. 133. 2.—p. 7. Upon furze at Willesboro' Leas; the Rev. Ralph Price. This singular plant is certainly not annual. At Hastings I collected it in flower as early as March: its fibres were then thickly matted for hybernation, the whole plant being conspicuous for its bright crimson red.

GENTIANA. Gentian.

autumnal, *amarella*, E. F. n. 135. 5.—a. 6, 7, 8. Upon turf and dry chalky spots abundant. The variety with a single flower may be frequently gathered: in favorable situations this plant presents an acute cone of flowers; most elegant, from the saffron green color they acquire, when dried.

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## UMBELLIFEROUS PLANTS.

ERYNGIUM. Eryngo.

Sea Holly, *maritimum*, E. F. n. 136. 1.—p. 7, 8. Upon the sea-

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ERYNGIUM. Eryngo.

shore at Dimchurch. Among sand by the road side between Pegwell and Sandwich.

SIUM. Water Parsnep.

narrow-leaved, *angustifolium*, E. F. n. 147. 2.—p. 6, 7. In dykes east of Deal; Mr. William Hutchinson.

SISON. Honewort.

corn, *segetum*, E. F. n. 148. 2.—a. 8. Half a mile from New Romney, on the road to Rye; *J. Woods jun. in Bot. Guide.*

CRITHMUM. Sampire.

sea, *maritimum*, E. F. n. 154. 1.—p. 7, 8. Upon chalk cliffs.

BUPLEURUM. Hare's Ear.

slender, *tenuissimum*, E. F. n. 166. 3.—a. 7, 8. Very large and abundant near the Semaphore, Dimchurch: on banks near the road, half way between Sandwich and Pegwell.

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Order III. *TRIGYNIA.*

STAPHYLÆA. Bladder-nut.

common, *pinnata*, E. F. n. 175. 1.—a. 5, 6. About Ashford; Parkinson.

TAMARIX. Tamarisk.

French, *Gallica*, E. F. n. 176. 1.—s. 5, 8, 10. Near Hastings; the Bishop of Carlisle.

This elegant shrub forms the ornament of Sandgate, flourishing upon its sandy banks, and flowering thrice



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TAMARIX. Tamarisk.

within the year. Planted inland, it has in many instances succeeded. The elegance of its beaded flower-buds and light feathery blossoms, accompanied by delicate foliage, commends this hardy tempter of the sea-breezes and spray to more general cultivation upon such spots.

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## Order V. *PENTAGYNIA.*

STATICE. Thrift.

common, *Armeria*, E. F. n. 179. 1.—p. 5, 6. Upon cliffs and banks near the sea. An unnoticed white variety occurs upon the north coast of Cornwall.

dwarf Sea-Lavender, *cordata*. S. scapo paniculato, foliis spathulatis retusis. *Sp. Plant.* Vol. III. n. 589. 13.

S. maritima, β. Flore Franc. n. 701. 5.

S. Limonium, β. E. F. n. 179. 2.

Limonium minus, *Ray, Syn.* 202. 2.

L. parvum, *Ger. Em.* 411. fig.

L. oleæfolium. L. bellidis folio. *Herb. Banks.—Act. Acad. Reg. Paris.*

L. cordatum. *Mill. Dict. Limonium*, n. 10.

L. parvum Narbonense, oleæfolium. *Lob. Icon.* 291, *ad dextram.*

L. minus oleæfolio polycladon. *Barr. ic.* p. 65, n. 689. t. 790.—p. 6, 7, 8. Upon the sides, and beneath, upon the ruins, of chalk cliffs, Eastwear Bay, Dover, Ramsgate. Upon a turfy spot adjoining the shore at Lydden Spout, "Harwich;" *Ray, Syn.* p. 202.—"At Margate;" *Gerard.*

This species, so long overlooked as distinct from S. Limonium, notwithstanding the decision of Gerard and Ray, the careful record of localities, and cultivation for

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STATICE. Thrift.

above 100 years in the Chelsea, and long since in the Oxford Garden, appears under as great variety of titles as any Spanish Grandee. Such as I have considered, upon inspection, to intend this plant, are placed above. The specimens in the Banksian Herbarium were collected as far back as 1729, in the Chelsea Garden. The figures of Lobel and Gerard are the same delineation, and are tolerably expressive of the plant when prostrate. The specific character is brief and discriminative.

S. cordata. Leaves spatulate; three nerved; pointed below. Stem panicled. Branches angular. Petals emarginate.

By decay of the leaves, the brittle stems of this plant become elongated above the root. The leaves, which form a tuft and spread slightly, are spatulate, (the footstalk being winged to the base, where the leafy part is enlarged in an oval form, and clasps the stem,) lanceolate, emarginate, with a hard or fleshy point directed downwards, variable in its length; cartilaginous, not undulated, at the edges; having a central strong rib, and two, sometimes four, nearly parallel ribs, continuous to within less than a third of the summit; in S. Limonium, the midrib is accompanied by alternately diverging, flexuose veins. The leaves of the latter species are usually considered veinless: by transmitted light, their structure is conspicuous. The stems bearing the panicle are rather flat: the branches, which rise within three inches of the base, are angular, somewhat winged, much divided, bearing spikes of flowers less crowded, and consequently less frequently reflected than in S. Limonium. The individual general bracteæ enclose from two to six flowers. The calyx is for half its length membranous, and is closed after flowering: in which respect it differs from S. Limonium; which,

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STATICE. Thrift.

having the hard ribs continuous nearly to the summit of the calyx, exhibits that part expanded after flowering. The petals are small, of a delicate purple blue, and emarginate.

The difference of habit will be best understood by an inspection of the reduced drawing, Plate 2. The most obvious character is presented by the leaves; and by the structure of the calyx.

LINUM. Flax.

narrow-leaved, *angustifolium*, E. F. n. 180. 3.—p. 7. On the Cliff edge, a little west of Pegwell, near Ramsgate.

DROSERA. Sundew.

round-leaved, *rotundifolia*, E. F. n. 182. 1.—p. 6, 7. Willesboro' Leas.

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Order VI. *POLYGYNIA.*

MYOSURUS. Mouse-tail.

common, *minimus*, E. F. n. 183. 1.—a. 5. In corn-fields upon the Green Sand; Cheriton, Coolinge, &c.

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## Class VI. HEXANDRIA.

Order I. *MONOGYNIA.*

ALLIUM. Garlick.

mountain, *carinatum*, E. F. n. 187. 3.—p. 7. "Near Ramsgate; between Sandwich and Deal;" Hudson, *Flora Anglica.*

Crow, *vineale*, E. F. n. 187. 5.—p. 7. Upon the edge of Shorne Cliff, above the Fort. Sand Hills near Deal. A variety was collected upon the last locality by Mr.

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ALLIUM. Garlick.

William Hutchinson, exhibiting a head of flowers without one of the usually numerous bulbs.

Ramsons, *ursinum*, E. F. n. 187. 6.—p. 4, 5. Below Postling wood. At the east base of Castle Hill, Folkstone.

SCILLA. Squill.

Hare-bell, *nutans*, E. F. n. 191. 4.—p. 4, 5. With pale pink or white flowers, near Lyminge; the Rev. Ralph Price.

NARTHECIUM. Bog-asphodel.

Lancashire, *ossifragum*, E. F. n. 194. 1.—p. 6, 7. Willesboro' Leas. A variety of this plant, with narrow taper leaves, tall stems, and pale flowers, was collected upon the Leas by my fellow-laborer, William Hutchinson. Menyanthes trifoliata with copious capsules, Fumaria claviculata, Luciola congesta, and Carex pulicaris, rewarded a walk over the treacherous bog the same day. It was then, July 4, that upon entering the Leas from Willesboro', we first saw Anagallis tenella in the beauty and profusion I have described. The district of Kent which we traverse is not productive of true bog plants. We want the Lycopodia or Club-Mosses: and boast no extended moor of *moss* to promise such rarities: I have not, it is true, examined the heath north of Ashford. Ham Ponds near Sandwich is a black, *grassy*, morass. Brabourne, once probably a rich locality, is lost by enclosure. Willesboro' yields Blechnum, Aspidium Oreopteris, and three Sphagna. Osmunda regalis, the flower-crowned Prince of English Ferns, has not as yet received homage in South Kent, though his fellows hold their court in the vale, beneath the ancient Castle of Saltwood.

CONVALLARIA. Lily of the Valley.

*majalis*, E. F. n. 196. 1.—p. 5. In woods above Stowting; the Rev. Mr. Andrews. Westfield; Ashford.

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CONVALLARIA. Lily of the Valley.

common Solomon's Seal, *multiflora*, E. F. n. 196. 4.—p. 5, 6. In Postling Wood; the Rev. Ralph Price.

JUNCUS. Rush.

great sharp sea, *acutus*, E. F. n. 198. 1.—p. 7. Among the Sand-hills near Sandwich; Mr. William Hutchinson. Between Sandwich and Pegwell, by the road-side.

The noblest of British species, and the most terrible. Woe to his hand, who, struck by the magnitude and beauty of its polished chestnut capsules, hastily attempts to rob the guarded treasure. In solitary grandeur, its tall tufts arrest the eye, rising upon the barren sands. The sight of this species well repaid a *séjour* in the deserted grass-grown streets of Sandwich; whose inhabitants of ancient renown are busy only, like owls, in the evening. In the heart of this deserted city, at an Inn once frequented, whose neglected chambers and stately ball-room now seldom echo the sounds of the game or the feast, I received kindness most welcome, because unexpected; and commiseration too, for the many fruitless wanderings through a labyrinth of streets, to and fro between the plains and the town, and the town and the plains. An *accurate ground plan* is an indispensable at Sandwich.

lesser sharp sea, *maritimus*, E. F. n. 198. 2.—p. 8. With the last: near Dimchurch, on the road to Rye? *Mr. Dillwyn in Bot. Guide.*

*obtusiflorus*, E. F. n. 198. 22.—p. 7, 8. Upon marshy, sandy, levels, abundantly: in Eastwear Bay, very profusely.

FRANKENIA. Sea Heath.

smooth, *lævis*, E. F. n. 201. 1.—p. 6, 7. Upon the salt-

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FRANKENIA. Sea Heath.

marshes; Dimchurch, New Romney, Sandwich, and Pegwell Bay. Upon moist chalk-cliffs near Lydden Spout, and east of Dover.

PEPLIS. Purslane.

water, *Portula*, E. F. n. 202. 1.—a. 7, 8. Willesboro' and Brabourne Leas.

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Order IV, *POLYGYNIA.*

ALISMA. Water-plantain.

star-headed, *Damasonium*, E. F. n. 209. 2.—p. 6, 7. In a pool upon the undercliff between Sandgate and Folkstone, (now lost); *Mr. Dillwyn in Bot. Guide.*

lesser, *ranunculoides*, E. F. n. 209. 4.—p. 8. In a pool on Brabourne Leas. In dykes above Sandwich; and at Ham ponds, abundant.

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## Class VIII. OCTANDRIA.

Order I. *MONOGYNIA.*

EPILOBIUM. Willow Herb.

French Willow, *angustifolium*, E. F. n. 212. 1.—p. 7, 8. Above Charing, on the Canterbury Road: *Flor. Fav.* and *Bot. Guide.*

The pursuit of this beautiful plant is repaid by the enjoyment of a very extensive view, Aldington Knowle, the Isle of Thanet, and the Isle of Sheppy, forming three points of the circle.

CHLORA. Yellow wort.

perfoliate, *perfoliata*, E. F. n. 213. 1.—a. 6, 7, 8. Upon the chalk, frequent. I collected a specimen in full perfection,

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CHLORA. Yellow Wort.

the 3rd. of this January, on Canterbury Hill. The central flower of this plant expands early in the morning, and closes at noon; the lateral flowers then expand, and continue open until sunset.

VACCINIUM. Whortle Berry.

Bilberry, *myrtillus*, E. F. n. 214. 1.—s. 5. In Westfield Wood; Mr. William Fagg.

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## Order II. *TRIGYNIA.*

POLYGONUM. Persicaria.

Snake-weed, *bistorta*, E. F. n. 220. 6.—p. 6. Collected by Mr. William Fagg, in a field to the right, upon Stonestreet, about eight miles from Hythe.

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## Order III. *TETRAGYNIA.*

PARIS. Herb Paris.

common, *quadrifolia*, E. F. n. 221. 1.—p. 5, 6. In thickets near Lyminge; pointed out to me by the Rev. Ralph Price. In Stowting Wood. In the wood above the Cherry-garden, near the turnpike.

This plant, variable in the number of its leaves, presents a singular variety when the number is five. The flower then follows the quinary division, presenting five calyx-leaves and petals, ten stamens, five styles, and a five-celled capsule. Several specimens of this variety were gathered at Stowting: those with other variations in the number of the leaves observing the usual four-fold division. See Plate 1, and its explanation.

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# Class IX. ENNEANDRIA.

## Order 1. *HEXAGYNIA.*

BUTOMUS. Flowering Rush.

common, *umbellatus*, E. F. n. 224. 1.—p. 6, 7. Dykes near the sea, south of Lydd. Near Sandwich.

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# Class X. DECANDRIA.

## Order II. *DIGYNIA.*

CHRYSOSPLENIUM Golden Saxifrage.

alternate-leaved, *alternifolium*, E. F. n. 229. 1.—p. 5. In the stream running through the vale between Sandling and Beachboro'; the Rev. Ralph Price.

SCHLERANTHUS. Knawel.

perennial, *perennis*, E. F. n. 231. 2.—p. 8, 10. With S. annuus in sandy cornfields above Newington Moor.

SAPONARIA. Soapwort.

common, *officinalis*, E. F. n. 232. 1.—p. 7, 8. At Lyminge and Sibton; Mr. Hutchinson.

DIANTHUS. Pink.

clove, *caryophyllus*, E. F. n. 233. 3.—p. 7. Upon the ancient arch-way of Weston-hanger; Mr. William Hutchinson.—Petals slightly bearded towards the claw. Leaves toothed to the point.



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## Order III. *TRIGYNIA.*

**SILENE.** Catchfly.

sea, *maritima*, E. F. n. 234. 4.—p. 7, 8. On the shingle below the Pest-house, Seabrooke.

striated corn, *conica*, E. F. n. 234. 5.—a. 7. On the Sand-hills near Deal; Sherard. Opposite the Warren-house at New Romney; *Bot. Guide.*

night-flowering, *noctiflora*, E. F. n. 234. 6.—a. 7. In corn-fields upon the chalk.

Nottingham, *nutans*, E. F. n. 234. 8.—p. 5, 6.

β. Lychnis major noctiflora Dubrensis perennis. *Ray. Syn. p.* 340. 12.

Silene paradoxa. *Fl. Br.* 467.

The flowers of this plant vary in the breadth of the petals: that variety with broad petals and broader leaves, is of delicate habit, and distils from its pale, yellowish white flowers, the most fragrant scent. This is probably the variety β of the English Flora, the Lychnis Dubrensis of Ray. The commoner plant is stained with a dull red in its foliage, stem, and petals. The filaments and styles vary much in comparative length. The filaments are long, and the styles short; or the reverse; both are short, or both long: or the length is variable in both styles and filaments in the same flower.

Silene nutans is not abundant in open situations: upon Shorne Cliff in several spots little frequented by cattle it may be collected; but no where does it flourish so well as upon the brow of the once rude, now tufted and glowing, heights of Encombe. The plant is humble, without grace, and uses no display; when night has hidden the glories of the garden, it expands its narrow petals and fills the whole air and every breeze with most delicious fragrance. What, in darkness, the distant glimmering lamp, the glow-worm, the fire-fly,

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SILENE. Catchfly.

are to the eye; what in still night, the sound of distant bells, of soft music, of flowing waters, is to the ear; what, in night's solitude, the trembling footstep, the hand, the lip of a friend is, to the sense of perception and touch, are flowers and fragrances, the tube-rose, the orchis, and the Catchfly to the sense of smelling; when the flowers of the day are faded, and the stillness and secret influence of night render sense, as well as imagination, more vivid and susceptible of agreeable, as well as more acutely impatient and conscious of displeasing or discordant, impressions.

ARENARIA. Sandwort.

plantain-leaved, *trinervis*, E. F. n. 236. 2.—a. 5, 6. Upon chalky banks.

*marina*, E. F. n. 236. 10.—a. 6, 7. Upon the chalk, as at Lydden Spout, an elegant plant with fleshy leaves, and large brown capsules. Upon the sandy shore, inconspicuous and inelegant.

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## Order IV. *PENTAGYNIA*.

COTYLEDON. Navel-wort.

common, *umbilicus*, E. F. n. 238. 1.—p. 6, 7. Upon a low stone wall with Asplenium Ceterach adjoining the point at which the Canterbury, Cheriton, Broadmead and Folkstone roads meet. Upon the wall of the east gate of Winchelsea.

SEDUM. Orpine.

Live-long, *Telephium*, E. F. n. 239. 1.—p. 6, 7. Between Hythe and Lenham in various places, abundant.

SPERGULA. Spurrey.

knotted, *nodosa*, E. F. n. 244. 2.—p. 6, 7. Upon the Warren

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SPERGULA. Spurrey.

at New Romney; about Lydd: upon the sand-hills, Sandwich. Upon a sand bank east of the Ivy Cottage, at Sandgate.

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## Class XII. ICOSANDRIA.

### Order I. *MONOGYNIA.*

PRUNUS. Plum.

wild Bullace, *insititia*, E. F. n. 250. 4.—t. 4. In hedges and woods about Beachboro'.

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### Order II. *PENTAGYNIA.*

MESPILUS. Medlar.

common, *germanica*, E. F. n. 251. 2.—t. 5. In a wood upon Broadmead near the road to the Cherry Garden.

SPIRÆA. Meadow-sweet.

Dropwort, *Filipendula*, E. F. n. 253. 2.—p. 6. Upon the chalk, south-west of Canterbury, Denton, &c.

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### Order III. *POLYGYNIA.*

ROSA. Rose.

Eglantine, *rubiginosa*, E. F. n. 254. 11.—s. 5, 6, 7. In East-wear Bay.

TORMENTILLA. Tormentil.

trailing, *reptans*, E. F. n. 258. 2.—p. 5, 6. Upon the bank, near the Boat-house, Sandgate east.

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# Class XIII. POLYANDRIA.

## Order I. *MONOGYNIA.*

PAPAVER. Poppy.

round-rough-headed. *hybridum*, E. F. n. 265. 1.—a. 7. In cornfields around Ramsgate.

CHELIDONIUM. Celandine.

common, *majus*, E. F. n. 263. 1.—p. 5, 6. In the stream by the road side at Beachboro', near the cottage before which a fine tree of the variegated Sycamore stands, adorning a scene little expected before it opens upon the winding road. How much less is the hidden moor suspected! of which I will not attempt to speak before its characteristic feature, the giant panicled Carex, recalls the name and the recollections associated with it.

GLAUCIUM. Horned-poppy.

yellow, *luteum*, E. F. n. 264. 1.—b. 6, 7. "On the sandy sea coast." A singular, rather than an elegant, plant, whose fugacious petals and elastic pods render difficult the collection of either flowers or seeds.

NYMPHÆA. White Water-lily.

greater, *alba*, E. F. n. 266. 1.—p. 7. In narrow dykes at Ham-ponds near the village: a noble plant, banished from the wide and pure streams, to associate with the humble Sparganium natans, Hydrocharis and Lemnæ. After a vain search in these parts for Cladium it was some relief to discover this queen of English water plants. The modern Greeks make a cordial of its flowers: the eye at least is refreshed by their spotless delicacy. I would willingly seek medicines elsewhere: even the famished lion felt the power of beauty, gazed, and turned aside.

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NUPHAR. Yellow Water-lily.

common, *lutia*, E. F. n. 267. 1.—p. 8. In dykes near Deal; Mr. William Hutchinson.

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Order II. *PENTAGYNIA.*

AQUILEGIA. Columbine.

common, *vulgaris*, E. F. n. 273. 1.—p. 6, 7. In woods above Stowting; Mr. William Hutchinson.

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Order III. *POLYGYNIA.*

RANUNCULUS. Crow-foot.

lesser Spear-wort, *Flammula*, E. F. n. 279. 1.—p. 6.—10. In watery places, at Whiting-Brooks, very large.

trailing, *β. reptans.* E. F. n. 279. 1. *δ.* Fl. Dan. t. 108. Upon a boggy bank above the mill-stream between Beachboro' and Cheriton. This variety, which has more than once occurred, pushes forth roots, through the base of the footstalks of its leaves, at every joint. These swelling and gaining weight, bear gradually the erect stems to the earth: a colony is at once formed: the progeny rise, ungratefully trampling upon their parent; and in autumn, flowers are seen upon the young plants, whose dwarf habit constitutes them a distinct variety.

great Spear-wort, *Lingua*, E. F. n. 279. 2.—p. 6, 7. At Ham-ponds. *Mr. Dillwyn in Bot. Guide.* Dykes near Deal; Mr. William Hutchinson. The old Haven of Sandwich. *Dr. Jacobs in Flor. Fav.*

Goldilocks, *auricomus*, E. F. n. 279. 5.—p. 4, 5. In woods and hedges upon the chalk.

corn, *arvensis*, E. F. n. 279. 12.—a. 6. Inland in corn-fields abundant. At Elham; the Rev. Ralph Price.

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RANUNCULUS. Crow-foot.

small-flowered, *parviflorus*, E. F. n. 279. 13.—a. 5, 6. By the pathway in the road from the Castle towards Mr. Gill's House, Sandgate.

ivy crow-foot, *hederaceus*, E. F. n. 279. 14.—p. 5, 7. Upon boggy spots and in rivulets. Lyminge, Brabourne, Willesboro'.

white floating, *aquatilis*, E. F. n. 279. 15.—p. 4, 5, 7. In ponds and dykes of fresh or sea water. With leaves wholly entire, in a pond at Dimchurch; wholly capillary, New Romney. In May, the dykes around Dimchurch present the appearance of snow, from the prevalence of this Protean species.

HELLEBORUS. Hellebore.

green, *viridis*, E. F. n. 281. 1.—p. 4, 5. In the lane leading from the road to Lyminge towards Postling wood; the Rev. Ralph Price. In Westfield wood; Mr. Lee.

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## Class XIV. DIDYNAMIA.

### Order I. *GYMNOSPERMIA.*

TEUCRIUM. Germander.

wall, *Chamædrys*, E. F. n. 284. 3.—p. 7. On the ruins of Winchelsea Castle, plentifully; Dr. Sherard.

GALEOBDOLON. Yellow Nettle.

common, *luteum*, E. F. n. 291. 1.—p. 4, 5. In hedges and in woods, frequent, where the soil is sandy.

STACHYS. Woundwort.

downy, *germanica*, E. F. n. 293. 4.—p. 8, 9. Once found at Earthiot, near Lyminge, by the Rev. Ralph Price.

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BALLOTA. Black Horehound.

common, *nigra*, E. F. n. 294. 1.—p. 6, 7. With white flowers, in the lane leading from the Camp-ground to Cheriton Street.

MAREUBIUM. White horehound.

common, *vulgare*, E. F. n. 295. 1.—p. 7. About Lydd. common.

THYMUS. Thyme.

Basil, *Acinos*, E. F. n. 299. 2.—a. 6, 7. In corn-fields upon the chalk.

SCUTELLARIA. Skull-cap.

lesser, *minor*, E. F. n. 301. 2.—p. 6, 7. At Brabourne. Upon Willesboro' Leas. Ham Ponds. In Romney Marsh.

PRUNELLA. Self-heal.

common, *vulgaris*, E. F. n. 302. 1.—p. 6, 7. With white flowers, by the pond-side at the Cherry Garden.

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## Order II. *ANGIOSPERMIA.*

EUPHRASIA. Eye-bright.

common, *officinalis*, E. F. n. 305. 1.—a. 5, 10. Upon the Green Sand, not common. Plentiful upon the chalk turf.

No gems can equal this brilliant and lasting ornament of the turf. When summer, with her gay companions, has deserted the woods and fields, when the completion of the harvest has robbed the landscape of its richer features, the grassy downs are still glowing with the tufted Euphrasia, which, scattered around, yet reminds us, by its beautifully varied white, of a chill, thoug

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EUPHRASIA. Eye-bright.

beneficial attendant of approaching winter. Its whiteness is tastefully varied with purple and pale yellow: as a hint, which though unwelcome, is kindly and delicately conveyed.

LATHRÆA. Toothwort.

greater, *Squamaria*, E. F. n. 307. 1.—p. 4. In a hazel copse below Postling Wood; first observed by the Rev. Ralph Price. In a copse above Hythe. *Mr. Dillwyn in Bot. Guide.*

The plant which I have considered L. Squamaria, collected upon the first-mentioned locality, presents no slight variation from the characters of L. Squamaria of *English Botany*, Vol. I. t. 50. With as great variety of habit, for this I presume from the very dissimilar figures to be found in works of accuracy, and a frequently club-shaped and proliferous stem, the *Lathræa* of Lyminge, and, I suspect, of Hudson in Flora Anglica and Rudbeck, *Elys.* Vol. II. 234, f. 17, presents more erect and purplish *pink* flowers, whose upper lip is *entire*, or very slightly cloven, the lower lip involute, the style *scarcely bent*, and *protruded* from the fold of the upper lip. The bracteæ are smooth and lanceolate: the calyx hairy. The flower purplish pink, edged with white: occasionally, the whole plant is white. The clubbed stems exhibit the true nature of the plant, throwing out from their base squamose offsets, into which also the imperfect flowers above are seen to pass. The herbage is buried about four inches in the loose earth, and bears opposite branches.

I have seen no figure, or dried specimen, which satisfactorily explains the difficulty. The figure in English Botany represents the upper lip deeply and acutely cloven, the style bent downwards near the stigma, and hidden. It is sufficient to point out differences, with-



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LATHRÆA. Toothwort.

out at once attempting the constitution of a second species: the plant of Lyminge may stand as *L. Squamaria* β.—Lathræa radice squamatâ, bracteis lanceolatis, stylo recto, è labio superiore sub-integro, exserto.

I am indebted to Mr. Price for this and many more rarities. Extended by his activity and example, observation quitted the coast to gain a yet richer store. In the garden at Lyminge I first saw Phyteuna spicata, collected by him in Sussex, in 1825. Salvia pratensis from Hartlep, Orchis fusca, and Vicia sylvatica clothing a light trellis with a profusion of elegant flowers and herbage. In that garden I first breathed again freedom and health, and admiring the assemblage of native beauties, determined to prosecute a study, whose uses, to omit its pleasures, to both mind and body, fully repay the time and the grateful labour which have been devoted to it.

PEDICULARIS. Red Rattle.

marsh, *palustris*, E. F. n. 308. 1.—p. 5, 6. Rare. Upon a confined boggy tract, to the right, between Beachboro' and Lyminge.

ANTIRRHINUM. Toad-flax.

round-leaved, *spurium*, E. F. n. 309. 2.—a. 7.—9. In chalky corn-fields abundant. Less frequently upon a sandy soil.

least, *minus*, E. F. n. 309. 6.—a. 6.—8. In chalky and sandy corn-fields.

OROBANCHE. Broom-rape.

greater, *major*, E. F. n. 315. 1.—p. 6, 7. Upon the roots, principally of Broom, occasionally of Furze.

clove-scented, *caryophyllacea*. *Smith in Linn. Trans.* Vol. IV. 169.
O. major. *Poll. Plant. Palat. Cat.* n. 600.
O. vulgaris. *Flor. Gall.* n. 454. 2453.

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OROBANCHE. Broom-rape.

O. major, garyophyllum olens. *Bauhin Pinax*, n. 87. p. 6, 7. Parasitical upon the roots of Galium Mollugo, Rubus fruticosus, &c. in hedges and waste ground below Cæsar's Camp Hill, the Sugar-loaf Hill, in Eastwear Bay, near Lydden Spout, and eastwards, to Dover.

" *Orobanche caryophyllacea* agrees very nearly with " *O. major* in habit and size, as well as in the appear- " ance of its flowers: but differs from the latter in " having the three segments of the lower lip obtuse, " and much more fringed and curled. The germen " also is entirely smooth, which in *O. major* is hairy " in the upper part, and the style is much less downy " than in that species. The most striking mark, how- " ever, of *O. caryophyllacea*, consists in the lower " part of the stamina, on the inside, being thickly " clothed with hairs, whereas that part in *O. major* is " perfectly smooth. The stigma of *O. caryophyllacea* " is brown or purplish, that of *O. major* yellow."— *Smith in Linn. Trans.* Vol. IV. 169. The calyx of our plant is of one 4-cleft leaf, clasping the corolla, and sometimes tubular: in *O. major* of two leaves. In *O. elatior* the filaments are smooth above: the stigma yellow, of two lobes; not purple, *drusy*, with a transverse furrow. *O. minor* has a purple stigma, but a calyx of two leaves. *O. cærulea* has 3 bracteæ.

The Clove-scented Broom-rape is variable in height, color, and in the number of its flowers. In height, from above two feet to a span: its prevailing color is a dusky purple; but it occurs also yellowish brown or nearly white. The spikes are obtuse, scantily clothed with from ten to sixty flowers, which, when newly expanded, distil a fragrant scent of cloves, remarkably developed if the plant be flowered in water. The stem

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OROBANCHE. Broom-rape.

is flexuose and fragile, hollow, with *much* white pith. See Plate III. and its explanation.

lesser, *minor*, E. F. n. 315. 3.—a? 7. In Eastwear Bay; Mr. Lee. Upon the Sand-hills, Deal.

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## Class XV. TETRADYNAMIA.

### Order I. *SILICULOSA.*

THLASPI. Shepherd's Purse.

Penny-Cress, *arvense*, E. F. n. 324. 1.—a. 5, 6. In corn-fields, rare. In Darnley Vale.

CAKILE. Sea Rocket.

purple, *maritima*, E. F. n. 329. 1.—a. 6. Rare. On the west shore, near Folkstone Harbour.

CRAMBE. Kale.

sea, *maritima*, E. F. n. 330. 1.—p. 5, 6. At the foot, and upon the sides, of chalk-cliffs. Lydden Spout. Eastwear Bay. Dover.

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### Order II. *SILIQUOSA.*

CHEIRANTHUS. Wall-flower.

wild, *fruticulosus*, E. F. n. 337. 1.—a. 4, 5. On the walls of Saltwood Castle. Folkstone Church, &c.

BRASSICA. Cabbage.

sea, *oleracea*, E. F. n. 342. 4.—b. 5, 6. At the foot of the Chalk, Lydden Spout east. Upon chalk-cliffs. Dover.

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SINAPIS. Mustard.

common, *nigra*, E. F. n. 343. 3.—a. 5, 6. Upon the Green Sand, near the Mill at Seabrooke; in hedges, not rare.

narrow-leaved, *tenuifolia*, E. F. n. 343. 4.—p. 6. Upon the chalk-cliffs at Dover, &c.

sand, *muralis*, E. F. n. 343. 5.—a. 7, 8. Common in the Isle of Thanet.* *Mr. Dillwyn, in Bot. Guide.*

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## Class XVI. MONADELPHIA.

### Order I. *PENTANDRIA.*

ERODIUM. Stork's Bill.

hemlock, *cicutarium* β. E. F. n. 345. 1. Geranium inodorum album. *Ray Syn.* 357.—a. 5. Upon sandy ground and banks near the sea.

sea, *maritimum*, E. F. n. 345. 3.—p. 5. On the walls of Sandgate Castle, (now nearly destitute of vegetation); *Mr. Dillwyn in Bot. Guide.* Sand Downs near Deal. *Flora Fav.*

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### Order II. *DECANDRIA.*

GERANIUM. Crane's Bill.

shining, *lucidum*, E. F. n. 346. 6.—a. 5, 8. Upon the walls of Lymne Castle. *Mr. Dillwyn in Bot. Guide.* Upon the hill side, near the Tanner's ground, Folkstone east, and between Folkstone and Dover.

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* "Solinus informs us that this island is destitute of snakes, and that earth "carried hence is used in destroying them. Its etymology, then, απο τε θαναρε, "Thanet, evidently sprung from this fatality of its soil to snakes." *Camden Britannia.*

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GERANIUM. Crane's Bill.

herb-Robert, *Robertianum*, E. F. n. 346. 5.—a. 5.
β. Geranium lucidum saxatile, foliis Geranii Robertiani. *Ray Syn.* 358.
Under a stone wall to the left of the Cheriton road, near the flour-mill.

jagged-leaved, *dissectum*, E. F. n. 346. 11.—a. 5, 6. Frequent inland upon the chalk.

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Order III. *POLYANDRIA.*

MALVA. Mallow.

dwarf, *rotundifolia*, E. F. n. 348. 2.—a. 5, 9.
β. Malva pusilla. *Engl. Bot.* Vol. IV. t. 241.
M. minor, flore parvo cæruleo. *Ray Syn.* 251. At Hythe. *Dr. Sherard.*
Ray remarks that the seeds are wrinkled: I have not met with the plant. A variety of M. sylvestris was collected by Dr. Emerson at Saltwood, bearing purplish blue flowers. I found the same plant between Deal and Sandwich; and remarked that all the flowers were barren.

musk, *moschata*, E. F. n. 348. 3.—p. 6, 7. Upon the rugged hill side near Lymne Castle. At Lyminge, by the road-side, north.

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## Class XVII. DIADELPHIA.

Order I. *HEXANDRIA.*

FUMARIA. Fumitory.

white climbing, *claviculata*, E. F. n. 350. 3.—a. 6, 7. In a field

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FUMARIA. Fumitory.

upon the east side of Willesboro' Leas, near the bank upon which Aspidium Oreopteris and Blechnum boreale grow, and, in the field, near a small pond.

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## Order II. *DECANDRIA.*

ULEX. Furze.

dwarf, *nanus*, E. F. n. 354. 2.—s. 7, 10. Upon sandy heaths; Shorne Cliff, Hothfield, &c.

ONONIS. Rest-harrow.

common, *arvensis*, E. F. n. 355. 1.

γ. Ononis repens, *Linn. Sp. Pl.* 1006.

Anonis procumbens maritima nostras foliis hirsutè pubescentibus. *Ray Syn.* 332.

"Near on Sand-downs by Deal; Mr. J. Sherard." *Ray Syn.*

PISUM. Pea.

sea, *maritimum*, E. F. n. 357. 1.—p. 7. Upon the beach near Walmer Castle; collected by Mr. William Hutchinson. "On the west side of Denge-ness, near Lydd;" Cambden.

LATHYRUS. Vetchling.

crimson, grass, *Nissolia*, E. F. n. 359. 2.—a. 5, 6, 7. Upon banks and dry turfy ground, frequent. Among rushes, to the left, below the Pest-House, Sea-brooke. Near the turnpike on the New road to Folkstone, plentifully; the Rev. John David Glennie.

narrow-leaved Everlasting Pea, *sylvestris*, E. F. n. 359. 5.—p. 6, 7. In hedges and woods above Hythe west, frequent. In a field adjoining the cavalry barrack, Sandgate.

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VICIA. Vetch.

wood, *sylvatica*, E. F. n. 360. 1.—p. 6, 7. Between Lyminge and Elham; the Rev. Ralph Price.

spring, *lathyroides*, E. F. n. 360. 5.—a. 4, 5. Upon the green-sand near the coast, abundant.

ASTRAGULUS. Milk-Vetch.

sweet, *glyciphyllos*, E. F. n. 365. 1.—p. 6. Upon a sandy bank near the Ivy cottage, Sandgate. In a wood near Sceene Farm, Cheriton; Mr. William Hutchinson. In a hedge to the west of Canterbury Hill, near Folkstone.

TRIFOLIUM. Trefoil-Clover, Melilot.

common Melilot, *officinale*, E. F. n. 366. 1.—a. 6, 7. In Sceene wood. In woods below Lymne Castle, and beneath the chalk.

Bird's foot Trefoil, *ornithopodioides*, E. F. n. 366. 2.—a. 5, 6. Upon the grassy flat near the Boat-House, Sandgate; and elsewhere upon the coast, frequent.

The earliest of the genus in producing its delicate rose-colored flowers. No one of our British *diminutives* of this tribe presents such a minature beauty as the dwarf plant of this species. Its light green distinguishes it as well as that of T. suffocatum.

suffocated trefoil, *suffocatum*, E. F. n. 366. 4.—a. 5, 6. Upon the sandy-plat near the last locality. Upon the Warren, New Romney; upon the common at Lydd.

The flowers of this interesting plant are of very transient duration. Its seeds are perfected without light: in the dim twilight admitted through the sand and its calyx, the *golden egg* is matured.

subterraneous trefoil, *subterraneum*, E. F. n. 366. 5.—a. 5. In pastures upon the green sand near the coast. Upon the sandy ground below Folkstone Church, this plant, with its singular stellated floral-radicles, may be studied with

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TRIFOLIUM. Trefoil, Clover, Melilot.

advantage, the turf which usually half conceals it being then wanting. Its seedlings are distinguished in winter by the varied pale and dark spotted pattern upon their leaves.

zigzag Clover, *medium*, E. F. n. 366. 8.—p. 6, 7. Upon the boggy tract below the road behind Beachboro', towards Lyminge. Upon the chalk, inland, though rarely.

Hare's-foot Trefoil, *arvense*, E. F. n. 366. 11.—a. 6, 7. Luxuriant and bushy upon the green sand cliff below Folkstone church.

β. Lagopus perpusillus supinus perelegans maritimus, *Ray Syn.* 330. t. 14, f. 2. Dwarf Hare's-foot trefoil. Upon sand at New Romney, and near Sandwich.

rough rigid Trefoil, *scabrum*, E. F. n. 366. 12.—a. 5, 6. Upon the green sand of the coast, abundant.

smooth round-headed Trefoil, *glomeratum*, E. F. n. 366. 13.—a. 5, 6. Upon the sandy brow of Shorne Cliff. Above the shore, Sandgate east.

soft knotted Trefoil, *striatum*, E. F. n. 366. 14.—a. 5, 6. Upon the Green Sand, abundantly.

strawberry-headed Trefoil, *fragiferum*, E. F. n. 366. 15.—p. 6, 7. In Darnley Vale. Upon the undercliff, Sandgate east. Inland, frequent.

*minus*, E. F. n. 366. 17.—a. 5, 6.
*filiforme*, idem 18.—a. 5, 6.
} With T. procumbens. T. filiforme is the less frequent of the three species.

T. filiforme is readily distinguished in all its varieties, from T. minus, by its nearly sessile leaflets, tufted spare heads, and truly stalked flowers. Now, it is a stunted, wiry, purple plant: now it imitates the larger species in profusion. It bears from one to twelve flowers: its seed-vessels mature one, but not rarely, perhaps in every specimen, two seeds.

The Trefoils, in which this coast is so rich, are, during their flowering season, the prominent, though



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TRIFOLIUM. Trefoil-Clover, Melilot.

humble, ornaments of the coast. Upon the sandy undercliff, near Folkstone, they acquire an unusual size and perfection: for these alone, not to mention the singular Medicks, this tract is well worthy a visit.

LOTUS. Bird's foot Trefoil.

spreading, *decumbens*, E. F. n. 367. 3.—p. 6, 7. In woods below the chalk range. Upon Newington Moor. &c.

greater, *major*, E. F. n. 367. 2.—p. 6. In hedges: above the Warren, Seabrooke. In Darnley Vale. Densely hairy, upon Willesboro' Leas.

MEDICAGO. Medick.

yellow sickle, *falcata*, E. F. n. 368. 2.—p. 6, 7. This plant was gathered by a party of young Botanists, with Silene noctiflora, Erigeron acre, and Antirrhinum spurium, at Dumpton Gap, near Ramsgate.

black. *lupulina*, E. F. n. 368. 3.—a. 5—8. In hedges and corn-fields, frequent.

The habit and characters of this plant are very variable: yet after an examination of a large number of specimens, I am unable to point out any distinction by which the suspected varieties may be constantly recognised. The plant of Ray, *Synopsis*, p. 333. "Medica polycarpos fructu minore compresso scabro," collected in Peckham fields, near London, appears at first sight distinct from our Kentish plant, but in habit alone. The leaves of the London plant are broader, finely serrated above, with a sunken point, and less strongly, though more copiously, veined than the narrow, nearly entire leaves of the Kentish variety. The stipulæ vary in the same points, and the whole plant, and particularly the extremities, of the London variety, are clothed with a dense and very beautiful auburn down. The compa-

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MEDICAGO. Medick.

rison has, however, been made with only one specimen collected a hundred years ago at Peckham. M. lupulina varies with smooth or hairy legumes; and their striæ are occasionally sharp at the edges.

spotted *maculata*, E. F. n. 368. 4.—a. 5, 6, 7—10. Upon sandy ground near the coast. Variable in size, in the number of convolutions, and in the spines, of its wreathed legumes. Their surface is destitute of wrinkles, and rather concave. The seeds vegetate quickly, and bear plants and flowers late in the year, which survive the winter.

reticulated, *denticulata*, *Willd. Sp. Pl.* n. 1387. 26. Vol. III. p. 1414.

Medicago maculata, β. E. F. 368. 4.

Medica marina supina nostras, foliis viridibus, ad summos ramulos villosis. *Ray. Syn.* 334. Medica marina. *Ind. Plant. Dub.* without the synonym of *Gerard*, Em. n. 1200. 3.

M. folliculo spinoso. *Lob. Ic.* Vol. II. 37 f. ?

M. cochleata, &c. *Mor. Hist. Plant*, p. 2, t. 15, sect. 2, f. 13, 14 ?

Medicago coronata. *Herb. Banks. Medicago*, n. 24.—a. 4, 5, 6. Upon exposed, sandy banks, near the coast, frequent. "At Romney, betwixt the town and Cony-Warren." *Ray Syn. Ind. Pl. Dub.* Between Romney and Rye. Collected near Weymouth, by Mr. Lightfoot, in 1774. "Cley, Norfolk; Mr. Bryant." *English Flora.*

This species, distinguished by Ray upon Plukenet's character, is at once recognised by its pale green, smooth herbage, small, pale-yellow flowers, and beautifully reticulated legumes; which become black in ripening. The legumes vary in the number of convolutions, and in the number and length of their spines. The short spined variety, which grows in a narrow

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MEDICAGO. Medick.

ditch, at the foot of the east hill, near Mr. Gill's house, at Sandgate, has many more rigid, hooked spines, than the variety with long, rigid spines, which is frequent elsewhere. The short-spined variety approaches closely to M. arabica *(Herb. Banks, Medicago*, n. 22,) and Medica cochleata, fructu ad margines leniter echinato, of *Boerhave (Herb. Banks.)* Professor Willdenow remarks its affinity to M. apiculata, which has a more closely reticulated legume, and is, possibly, the M. arabica of the Banksian Herbarium, quoted above. Professor Willdenow's specific character is distinctive, but the name "denticulata," expresses nothing peculiar to this species: this difficulty, indeed, must attend too many specific names, until the necessity, or rather, the convenience, of a single word, is disallowed. The character is this:—

M. Stalks many-flowered; legumes whorled, flat on both sides; whorls two, reticulated, with marginal, diverging spines; stipulæ fringed with teeth; leaflets, obovate, toothed.

To these characters may be added, spines of the legumes in two zigzag rows; bracteæ simple, awl-shaped. Leaves, at the extremities of the prostrate branches, hairy. Roots bearing forked, tuberous, fleshy knobs. See Plate I, and its explanation.

little Bur Medick, *minima*, E. F. n. 368. 6.—a. 6, 7. Upon sandy ground between Sandwich and Pegwell, abundant.

The tract, upon which this singular little plant, and so many other rarities, occur, and which, accompanying the winding Stour, runs uninterruptedly as far as Canterbury, embracing as a branch the productive boggy tract termed generally "Ham Ponds," is continued also to the sea over Sandwich Haven and Pegwell Bay. This tract has three divisions—the first between Sandwich and Pegwell in a straight line, is salt-marsh,

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MEDICAGO. Medick.

and is characterised by its Orache tribe, by the Glass-worts, and by Artemisia:—the second is sandy, running from Cliff-end, westwards to Sandwich; where it is interrupted, but resumed again upon the shore as far as Deal, constituting the Sand Hills; it meets the chalk at Walmer, and the plastic clay at Cliff-end; and is characterised by M. minima, Juncus acutus and maritimus, and Arundo arenaria: the third is a black boggy, or pasture tract, abounding in Scabiosa succisa, a dwarf, downy leaved, species of Willow, and many Orchideæ; and locally yielding the rare Cladium. I visited this tract late in the year, yet in time to find Statice Limonium in flower, and to admire the magnificent Juncus acutus in fruit, Medicago minima, Silene conica, and the singular Atriplex pedunculata.

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## Class XVIII. POLYADELPHIA.

### Order I. *POLYANDRIA.*

HYPERICUM. St. John's-wort.

Tutsan, *Androsæmum*, E. F. n. 369. 2.—p. 6, 7. In Eastwear Bay. In the wood below Lymne Castle. &c.

marsh, *elodes*, E. F. n. 369. 11.—p. 6, 7. Upon Willesboro' Leas.

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## Class XIX. SYNGENESIA.

### Order I. *POLYGAMIA ÆQUALIS.*

LACTUCA. Lettuce.

strong-scented *virosa*, E. F. n. 373. 1.—b. 7, 8. Below the path

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LACTUCA. Lettuce.

above the cliff, half-way between Folkstone and Sandgate. Upon the Chalk Cliffs around Lydden Spout.

This plant rises to a gigantic height at Lydden Spout. The tallest are above eight feet; and when in flower and perfection, are the largest British plants of the tribe, adding a remarkable feature to the precipitous cliffs, which are tufted with Crithmum, and the elegant Statice cordata. The neatness of the signal-station, the pure stream rushing from its cavern, the rocks covered by rare fuci and confervæ, the staircase carved in the solid chalk, with its many and laborious windings, upon the face of a cliff 500 feet in height; the assemblage of rare plants at its foot; these are features which attract the stranger to a spot, otherwise cut off and secluded from society or observation. The following are the plants which may be collected within three hundred yards of the station on either side.

Glyceria distans.
Aira canescens.
Rubia peregrina.
Galium anglicum, hairy variety.
Erythræa pulchella.
Convolvulus Soldanella.
Samolus Valerandi.
Chenopodium maritimum.
Beta maritima.
Crithmum maritimum.
Statice cordata.
Frankenia lævis.
Chlora perfoliata.
Arenaria marina.
Reseda luteola.
Glaucium luteum.
Orobanche caryophyllacea.
Crambe maritima.
Cakile maritima.
Lactuca virosa.
Crepis biennis.
Ophrys apifera.
Orchis pyramidalis.
Euphorbia paralia.
Scolopendrium vulgare.
Brassica oleracea.
Gentiana amarella.
Hippophae rhamnoides.

PRENANTHES. Wall Lettuce.

ivy-leaved, *muralis*, E. F. n. 374. 1.—a. 6, 7. Upon old walls

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PRENANTHES. Wall Lettuce.

at Hythe. In woody lanes, and upon banks of the chalk.

CREPIS. Hawk's-beard.

rough, *biennis*, E. F. n. 378. 4.—b. 6, 7. Upon the slopes of the chalk, near the sea, frequent.

CARDUUS. Thistle.

milk, *marianus*, E. F. n. 384. 4.—a. 5, 6. By the road-side, between Sandgate and Hythe, and elsewhere, not uncommon. Inland, I collected specimens, in a bushy copse, not a foot in height, with short leaves and a single flower.

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Order II. *POLYGAMIA SUPERFLUA.*

ARTEMISIA. Wormwood.

upright-flowered, *gallica*, E. F. n. 393. 3.—p. 8. With A. maritima, in Sandwich-haven.

TUSSILAGO. Colt's-foot.

butter-bur, *Petasites*, E. F. n. 397. 2.—p. 4. By the side of a dyke, near the Elm-walk at Hythe.

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Order III. *POLYGAMIA FRUSTRANEA.*

CENTAUREA. Star-thistle.

yellow. *Calcitrapa*, E. F. n. 410. 6.—a. 6, 7. By the road side, between Sandgate and Hythe, &c.

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## Class XX. GYNANDRIA.

Order I. *MONANDRIA.*

HABENARIA.

butterfly-orchis. *bifolia. Hort. Kew.* Vol. V. 193.
Orchis bifolia. E. F. n. 411. 1.

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HABENARIA.

Platanthera bifolia. *Richard. Orchid. Europ.*

The structure of the anther of this fragrant plant demands for it a separate genus; at least, while no inconvenience attends its removal from Orchis, let it be associated with those plants to which its structure and character have the closest affinity. In the arrangement of M. Richard, it forms, among European genera, a group with Gymnadenia (Orchis conopsea), and Chamorchis: Herminium is also placed here, being allied in structure to Gymnadenia. Platanthera is the genus of M. Richard, characterised by the lateral position of the anther-lobes, whose foot rests upon a concave, glutinous, projecting scale, upon which scale the fertilization of the stigma depends. Without these scales, the anther-lobes must fall from the flower. The nectar is distilled in a tube, which opens immediately below the stigma. Early in the day, the treasure is robbed;

"Through the soft air the busy nations fly,
"Cling to the bud, and with inserted tube
"Suck its pure essence, its ethereal soul."

*Thomson.*

But the eager insect, in thrusting forward its head, comes in contact with the scales: the lobes are withdrawn, and decorate the robber with no light appendage; his feet are applied to remove the incumbrance, and the pollen is brushed upon the stigma. This process, which compensates for the stolen nectar, is a beautiful instance of provision, distinct from the provision made in other cases in the same tribe, and may rank with the well-known instances in the Birthwort, the Fig, and the Berberry. How inapplicable to any one plant is the specific name, "bifolia?" and how

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HABENARIA.

indistinctive of a structure and provision, which are scarce alluded to in the details of this plant? Such a structure sufficiently justifies the separation of H. bifolia from Orchis. I will now briefly describe a most singular proliferous variety of the same plant.

The specimen was observed in the wood below the Cherry Garden, by the acute eye of William Hutchinson, as we drove towards the chalk in search of of Orchis ustulata. From the weight of the flowers, which were twenty-two, the head drooped slightly. Each *flower* exhibited a bractea, an elongated germen, the calyx and petals, the spur, lip, and *staminal (column* of E. F.) with its lobes; and bore upon its sides and from the centre, a *clump* of more or less perfect, distinct, *florets:* these varied in number from one, to ten or twelve in the same flower. The lower *floret*, after eight others had been removed from its centre, presented the parts of several, mingled with narrow leaves, which appeared to be the bracteæ of the first eight. When this lower floret was removed from the general *flower*, it exposed two, which extended laterally, without any line of separation, from the staminal of the general flower, and were very imperfect in their structure—Plate IV. fig. 1, b b. The individual central florets, separable from the mass by their very short germ—fig. 3. a.—still appeared proliferous. They all exhibited at last one upper calyx leaf, a spur and imperfect lip, a tolerably perfect staminal, and the rudiments of a second in the centre. These rudiments of staminals were presented by all the florets which I examined. The outer florets were the largest; the innermost very small, many being much smaller than fig. 4.

The uppermost *flower* of the spike, had one distinct



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HABENARIA.

floret only, composed of a staminal and three petals, without lip or spur.

I have been minute in this description, because such a mode of prolific vegetation in the flower is, at least, very rare. The doubling of Aquilegia, and, especially, of the Primrose ("Cowslips two in a hose") approaches this mode; the Daisy exhibits a more parallel instance —but in the case of H. bifolia, the peculiarity consisted in the prolific vegetation of the *florets*, as well as of the *flower*.

ORCHIS.

pyramidal, *pyramidalis*, E. F. n. 411. 2.—p. 6, 7. Upon the Chalk, Green Sand, Gault and Weald. Below the New Road to Folkstone, very abundant and deeply-colored.

White varieties of this species are rare. The fetid odor, which has really met with admirers, is always the same, and remarkably penetrating. The lip varies much in its lobes, which are frequently crenate. The traces of the barren anthers are distinct; the pollen of the anther-lobes forms rings where it meets the foot. This plant as well as O. conopsea and latifolia, not unfrequently presents clubbed or double flowers. *Rudbeck Elys.* n. 188, f. 4. represents an Orchis with lips twice and thrice compound.

Green-winged Meadow, *morio*, E. F. n. 411. 3.—p. 5, 6. Upon Shorne Cliff. In a field to the left on Hythe hill. With white and rose-colored flowers, in fields at Lyminge.

early purple, *mascula*, E. F. n. 411. 4.—p. 4, 5. Rarely with white flowers.

dwarf dark-winged, *ustulata*, E. F. n. 411. 5.—p. 5, 6. Rare. Upon the hill, to the west of the Cherry Garden.

blood-crested military, *fusca*, E. F. n. 411. 6.—p. 5, 6. Inland. Elham, &c. upon the chalk.

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ORCHIS.

spotted palmate, *maculata*, E. F. n. 411. 13.—p. 6, 7. Upon bogs, and high dry situations. Pale and conspicuous, upon Willesboro' Leas.

aromatic palmate, *conopsea*, E. F. n. 411. 14.—p. 6, 7. With white flowers, at Stowting. The Rev. John David Glennie; with spotted purple flowers at the Cherry Garden.

ACERAS. Man-orchis.

crimson-lipped *anthropophora*, E. F. n. 412. 1. Upon chalk downs around Stowting; the Rev. Ralph Price. I received specimens from Sir John Maxwell Tylden, with Orchis fusca and morio, Ophrys fucifera and aranifera, in the beginning of May. These were collected near Sittingbourne. One only, of those I then received, was destitute of the deep crimson-brown color, which characterises the variety collected by Sir James E. Smith among the Apennines. About a fortnight afterwards, Mr. Price sent me a specimen of this crimson-tipped variety, bearing eighty-seven flowers in a spike, the greater part appearing in perfection at the same time. The spike tapered little and very gradually, and rose fifteen inches above the root.

The flowers of this plant emit a fragrance more aromatic, but less sweet, than those of the honey-suckle. This scent is strongest of an evening, and is then not pleasant. It is observed of this plant, that its flowers are scentless; the fragrance also of Orchis ustulata, imitating that of the delicious Heliotrope, is unnoticed.

HERMINIUM. Musk-orchis.

green, *monorchis*, E. F. n. 413. 1.—p. 6, 7. Upon chalk downs at Stowting. Upon turf, between Lyminge and Elham.

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OPHRYS. Insect-orchis.

Fly-orchis, *muscifera*, E. F. n. 414. 1.—p. 6. Upon the chalk, in low turfy brushwood copses, inland, not rare.

By the figure of a single flower, the breadth of the lip and the minute glands below the staminal, represented too large in English Botany, may be perceived without description. Such is our plant, of which I have collected specimens bearing twelve flowers. The delicate green and lightness of the stem, the singular and beautiful flowers, contrasted with the vulgar tribes of more homely hue, distinguish the Fly-Ophrys even at a distance. The petals, which complete the deception, as antennæ, give to the flowers the character of insects impaled and expanded upon a spray by the Butcher-bird. The Bee-ophrys has, indeed, the appearance of that insect, engaged in pilfering a flower; Mr. Price has frequently witnessed attacks made upon the plant by a Bee, similar to those of the troublesome *Apis muscorum;* and I have myself seen a young entymologist, approaching stealthily, with out-stretched hand, the successful deceiver, whose mimic beauty became, alas! its own ruin; for we attach a greater value to happy delineations of trivial things, than to the things themselves. To the "sports of nature," as they are playfully called, as though creation could trifle, this value, and an extraordinary share of wonder, are peculiarly attached.

bee, *apifera*, E. F. n. 414. 2.—p. 6, 7.

β. Petals involute; upper lobes of the lip triangular, deeply divided: calyx leaves blunted.—Upon the chalk downs and at their foot, frequent. Upon the green-sand, Limestone-hills, west of Hythe. Mr. Lee.

This plant is smaller in all its parts than the variety figured in *English Botany*, t. 65. The petals are invo-

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OPHRYS. Insect-orchis.

lute, resembling antennæ, and are of a brown purple color; they sometimes present an expanded, and, in such cases, distorted surface; but the plant does not then resemble Sowerby's figure, which correctly represents the specimens received from the Isle of Wight. The anther lobes of this plant are brought in contact with the stigma, by the elasticity of their thread-like supports; these contract, and at length withdraw the pollen masses from their cells, which strike by the force with which they are withdrawn, and become attached by its viscidity, to the stigma.

drone, *fucifera*, E. F. n. 414. 4.—p. 4, 5. Upon chalk downs and meadows. Upon the hill to the west of the Cherry Garden. Inland, near [illegible], abundantly. "Banks of Whitehall in Selling;" *Dr. Jacobs.*

Every individual of this tribe acquires an interest from structure, variety, or rarity; with few exceptions, they are a beautiful group, and command the attention of the most indifferent. Next to O. arachnites, which is more peculiarly a plant of this district, the history of O. fucifera, demands a place among the records of botanical study. The neighbourhood of Sandgate, affords very few of this species. I am indebted to Sir John Tylden's indefatigable activity and devotion to practical science, for the opportunity of making the following notes, gathered from an inspection of more than two hundred specimens, collected by him, in the neighbourhood of [illegible].

In the end of April I received a few plants, more than one of which accorded with the characters of O. fucifera: the rest approached O. aranifera. I requested, and obtained immediately a collection of the varieties, and gathered at once from them these general remarks: *Fifty-five* exhibited entire lips, a larger number, lips

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OPHRYS. Insect-orchis.

slightly lobed: about *thirty*, deep lobes upon the sides: *one* had entire strapshaped petals (*See Vaillant Bot. Paris, t.* 31, *f.* 15, 16.): the downy petals of all the rest were more or less jagged and spear-shaped: *above half* of the whole number presented a small terminal gland within the sinus at the base of the lip: they were all in general equally advanced in flowering, and varied most in the depth of color exhibited by the lip and by its livid grey, pale-yellow, or green marking.

These are characters attributed to both plants: one, the terminal gland, has been denied to either, but is I think represented by Rudbeck, in the plate referred to in *English Flora* (Rudb. Elys. Vol. II. 205. f. 25.) as a figure of O. fucifera. The specimens collected near Folkstone accorded with the [illegible] varieties; from a comparison of both I collect the character.

Plant a foot high or less, erect. Stem rather flexuose.

Root-leaves broad, short, expanded; stem-leaves sheathing, tubular at the base, acute, lanceolate. Bracteæ oblong, blunt, ultimately longer than the seed-vessel, sitting. Calyx of three blunt, three-nerved, entire, pale-green, fleshy leaves; the upper one frequently strap-shaped, the lateral pair lanceolate, inserted obliquely. Petals shorter than the calyx, truncated or emarginate; waved, jagged, or entire at the edges; expanded, winged, ovate, or triangular at the base; densely though minutely downy, rarely smooth; deep yellow-green; brown or purple at the edges; in decay revolute; the base of their midrib crowning the seed-vessel. Staminal at right angles with the lip, the beak pointing downwards, blunt; its valves orange-red and inflated, the margins membranous; the pouches spherical, shining and fleshy; the scales lense-shaped; the pollen wedge-shaped and yellow. The whole staminal is rough, with minute spiculæ pointing upwards, which,

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OPHRYS. Insect-orchis.

descending behind the staminal, become hairs and unite with those of the lip. Stigma concave, remote, viscid and shining, pale-green; glands at the confluence of the staminal and lip, deep sea-green, smooth, shining, prominent. Neck of the lip minutely downy, convex; embraced by the shining, livid, smooth collar, whose lobes extend downwards and are variously disposed, brown, purple, bluish black, rarely pale-yellow stained with brown; enclosing frequently an oblong, downy spot. Lip as broad as long, of equal average length with the central or upper calyx leaf, entire or lobed: hairy at the sides, which bear above a conical prominent horn; pale, smooth, fleshy and frequently dilated at the margin, which is suddenly narrowed, sinuated or sharply emarginate in front, bearing often within the sinus a minute or conspicuous terminal segment or gland; the gland oval, pointed or gibbous, green, swelling, fleshy.

The earliest of these plants was collected about the 22nd of April; the latest about the 15th of May. I then concluded that the Fucifera and Aranifera must be the same species: and this conclusion is stronger upon an inspection of the Aranifera of Oxfordshire, of many figures, and especially of the figure in *Flora Lond.* t. 67. and *Vaillant Bot. Paris.* t. 31. f. 15, 16. These observations are now offered to attract further attention to the subject, and in due respect to the decision of Sir James Smith. It is possible the two species occur together, and have mingled, as the O. apifera and arachnites do so frequently, their characters by interchange of pollen: whence however is the terminal gland derived? Enough of this: I will now briefly describe a very singular variety.

The plant in habit and general character accorded

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OPHRYS. Insect-orchis.

with perfect specimens. The bractea was elongated as well as the seed-vessel. In place of a stigma and lip were three staminals, each complete, placed upon a triangular base, their anthers and beaks turned inwards. In one flower, both petals occupied their usual station. Two of the three calyx leaves were combined, representing the lip, of which no trace was visible in any one of four flowers composing the spike. The variety was gathered at Orpington, with three others remarkable only for the distortion and proliferous appearance of their flowers. See Plate IV.

late Spider, *arachnites* E. F. n. 514. 3. p. 5, 6, 7. Upon chalk downs, and in meadows and hedges upon the chalk, frequent.

I gathered this plant with the Bee Ophrys, the first of either species which I had seen, beneath a hedge to the east of the Cherry Garden, where the Clove-scented Broom Rape grows. Since that day, what an infinite and beautiful variety of these species has it been my good fortune to examine and admire! The general description of the plant, in the *English Flora*, quoted above, sufficiently characterises it; I will merely add a notice of the principal varieties, prefaced by a concise character of the true flowers. First of *O. arachnites*: Calyx—blunt-lanceolate, pale rose, with some purple, and a green midrib. Petals—dagger-shaped, blunt-pointed, swelling at the base. Staminal—straight-beaked. Lip—undivided, hairy, with two depressed, variable, horns above, emarginate below; the sinus filled by a protruding glandular, entire or trifid, pale-green process.

The lip, in *O. apifera*, is much shorter than the calyx, 5-lobed, and reflexed entirely round; the petals are club-shaped, swelling at the base; the staminal has

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OPHRYS.

a hooked beak. The terminal lobe of the lip is homogenous with the lip itself, and projected only before full expansion; then curved behind like the last joints of the abdomen of the wasp. Haller had plainly not seen *O. aranifera*, when he wrote the account of his Orchis fuciflora, n. 1266; this is obvious. If that account be read attentively, one remark will prove it. "The lower edge of the lip is slightly emarginate, a "nearly triangular serrated process *projecting* from the "nick, *(hilo)*, which process in the perfectly expanded "flower *(flore* integerrimo) is bent backwards."—*Stirpes Helveticæ*, n. 1266. He thus makes one species of *O. apifera and arachnites. See the same account*, n. 1266. 2. β. f. 3, and 5. His figure of O. arachnites is characteristic.—*Rudbeck, Elys.* 205. f. 25, represents correctly a gigantic specimen of *O. arachnites.*

O. arachnites and apifera, by a commixture of pollen produce a great variety of character. The type most constantly preserved, is the *proportion* and *terminal segment* of *arachnites.* I have not yet seen a variety exhibiting the *lip* of the Bee, with the *petals, calyx*, and staminal of arachnites: the nearest approach to it is figured, with three other very remarkable varieties. *See Vaillant Bot. Paris*, t. 30, f. 9, a. and 9.

If, among the Alps, such varieties abound, as they do upon our chalk downs, Haller's union of the species can scarcely be regarded with surprise. The protruded gland at the base of the lip and its proportion to the calyx, are the only invariable guides; which, in his opinion, might not be considered discriminative characters.

A beautiful and interesting variety, deserving particular notice, was collected by Mr. Lee, an admirer and indefatigable investigator of his native botanical rarities, upon the finely-moulded downs between New-



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OPHRYS.

ington and Lyminge. The tone of its pale citron-green, in both herbage, *calyx* and *petals*, closely resembles that of O. fucifera, with which I have figured it. The lip is variable in form, the margin deep and pale, and the gland large, and in several cases distinctly trifid. Is it possible that a plant of O. arachnites can communicate with, and receive pollen transferred by an insect from, O. fucifera? Upon the 17th of May, in the past year, a year remarkable for the early flowering, (as well as, from continued rains about June, for the long continuance in flower), of many plants, I had specimens of *O. arachnites and fucifera*, blooming *together*. If this be the case,—but let it be regarded as supposition—the varieties in O. fucifera may be thus explained. Mr. Andrew Matthews collected O. arachnites several years since at Ospringe, whence the varieties of O. fucifera were procured. The terminal gland, the variable lip, the marking and the petals of O. fucifera exhibit traces of this. The purple rose-color of O. arachnites, is indeed, as far as I am aware, suppressed in these varieties. This supposition may be regarded as chimerical; it is at least plausible; and will furnish a new motive of interest in these singular and beautiful plants.

NEOTTIA, Lady's Traces.

wreathed

*spiralis*, E. F. n. 416. 1.—p. 8, 9. Upon turfy ground, above the shore between Sandgate and Folkstone; and at the foot of the chalk downs above Newington, upon Folkstone-hill, &c. abundant.

At the time when the flowering spike of this plant is elevated among the decayed leaves of the preceding autumn, a new tuft of leaves is raised from the crown of the taper bulbs, to announce the hope of the suc-

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NEOTTIA, Lady's Traces.

ceeding year. This is true hereditary succession, and, while the winter, like a turbulent interregnum, lasts, the leaves act as the guardians and protectors of the future heir.

LISTERA. Twayblade.

common, *ovata*, E. F. n. 417. 1.—p. 6. With flowers united in pairs, or threefold, in shady copses, not rare.

Bird's-nest, *Nidus avis*. E. F. n. 417. 3.—p. 5, 6. In a copse, near Sandling Lodge; Mr. William Hutchinson.

EPIPACTIS. Helleborine.

broad-leaved, *latifolia*, E. F. n. 418. 1.—p. 6, 7. In woods: in Postling-wood, &c. frequent.

marsh, *palustris*, E. F. n. 418. 3.—p. 6, 7. Upon Newington Moor; upon a confined bog, north of Beachboro'; at Ham ponds, plentifully.

large white, *grandiflora*, E. F. n. 418. 4.—p. 6. In shady woods, inland.

narrow-leaved white, *ensifolia*, E. F. n. 418. 5.—p. 6. In North Kent; Mr. Charwood.

MALAXIS. Bog-orchis.

least, *paludosa*, E. F. n. 419. 1.—p. 7. "In divers places in Romney Marsh."—*Ray*.

two-leaved, *Læselii*, E. F. n. 419. 2.—p. 7. At Ham ponds. *Mr. Dillwyn, in Bot. Guide.*

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## Class XXI. MONŒCIA.

### Order I. *MONANDRIA.*

EUPHORBIA. Spurge.

sea, *paralia*, E. F. n. 423. 6.—p. 7, 8. Within the path, at Lydden Spout.

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EUPHORBIA. Spurge.

upright warty, *stricta*, E. F. n. 423. 8.—a. 6, 7. Upon the borders of corn-fields near the Tile-kiln, Cheriton Street.
The plants of this species exceeded two feet in height.

ZANNICHELLIA. Horned Pondweed.

common, *palustris*, E. F. n. 424. 1.—a. 7. In ponds upon the Green Sand.

---

Order II. *TRIANDRIA.*

TYPHA. Reed-mace.

lesser, *angustifolia*, E. F. n. 425. 2.—p. 6, 7. In dykes, abundant. T. latifolia is the rarer species: it grows with T. minor in a dyke at West Hythe. This place, now a scattered inland village, was once a small town with a sea-port, and was united to Lymne; the Westhythi and Portus Lemanis of the Romans. *Camden.*

SPARGANIUM. Bur-reed.

branchless, *simplex*, E. F. n. 426. 2.—p. 6, 7. In ponds in Eastwear Bay.

floating, *natans*, E. F. n. 426. 3.—p. 7. In dykes at Ham ponds, &c.

CAREX. Sedge.

flea, *pulicaris*, E. F. n. 427. 3.—p. 5, 6. Upon turfy bogs.

oval-spiked, *ovalis*, E. F. n. 427. 8.—p. 6. Upon sandy, wet, turf.

remote, *remota*, E. F. n. 427, 10.—p. 5, 6. By the sides of dykes and boggy ponds.

bracteated, *divisa*, E. F. n. 427. 15.—p. 5, 6. Near the sea upon moist turf; "at Hythe:" Sherard.

great-panicled, *paniculata*, E. F. n. 427. 20.—p. 6. Upon Newington Moor.

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CAREX. Sedge.

The Moor, which tempts a visit for this and many more rare plants, embosomed among hills and concealed by the luxuriant foliage closing upon it at either extremity, remained unexplored, and indeed unsuspected, until chance opened it as some hidden page of history, and developed suddenly a new feature of the country. Few have enjoyed the charm of this singular and wild spot. The undercliff scenery of Eastwear Bay bears a just preference for extent, effect and variety: but the Moor of Newington, for its peculiar character of neglected, rugged wildness, has no rival in this part of Kent. The picturesque Undercliff of the Bay is better known; whose mimic mountain-group, rising to the left a little below the Warren House, deserves a moment's admiration as we enter the Bay from Folkstone. Some general remarks upon the Chalk-range and the country it embraces will delay us little longer.

This range, a wide and beautiful belt of woodland, down, and cultivated scenery, stretching into the sea, at Beachy Head, its towering white cliffs, and tending thence inland to gird a fertile tract of little less than eighty miles in breadth, rises again upon the South Foreland like a giant fortress, welcome to the Briton for far more than the renown it has for ages commanded, the bulwark of the people who, for the common safety, twice took up arms against the invader, but found the sword in their own hands the weapon alone of victory: "tum de salute, mox de victoriâ "certavêre." *Tacitus.*

Within this range of hills, varying from one to above five hundred feet in height, a great variety of locality and soil is comprised. The Iron-sand, the Weald-clay and the Green-sand are conspicuous formations, and severally afford gravelly and sandy heath and coast country, low and elevated pasture, moor, fen and salt-

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CAREX. Sedge.

marsh. The Botanical contents of this portion of Kent and Sussex we partly know from the researches of Dr. Jacobs around Feversham, Dartford and Canterbury; of Mr. Forster around Tonbridge Wells; of Sherard, Dillwyn and Borrer upon the coast and in the western district. Of a considerable portion, however, the country between the Green-sand Escarpment above Romney Marsh and the Iron-sand line from Lamberhurst to Cox Heath, we possess comparatively little information. It is a fair object, but one requiring study for many years, to advance and illustrate the general Flora of Kent. To this end I seek, and humbly ask, information upon all points.

Let us return from this digression to our immediate subject, the Moor. The road leading through Newington to Beachborough must be quitted by a narrow path to the left, where it turns round a sandy bank a little above Beachborough village. Some detached and graceful trees surround the stream, which, rising in a wooded bay or recess in the hills a mile above the village, skirts the park, and crosses the road not far from the park lodge. The incessant stroke of the water-mill is scarce heard in the valley itself, which we gain by pursuing the path beneath the trees. A rustic cottage, a pollard willow, and a rude plank bridge next appear; a small and neglected, though pure, spring bubbles up at the foot of the bank. Arrived at the ash tree which flanks the pathway, what a new and wild scene greets you! Herbaceous vegetation assumes a giant growth; the Gladwyn, the Bur-reed, the Rush, the Sedge, the Valerian, the Lotus and the Wood Cyperus, astonish by their size and developement. Beyond the winding stream, where it turns eastward through a willow copse to meet the picturesque road below Sceene Farm, a rising bank displays the pecu-

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CAREX. Sedge.

liar character of the predominant Carex. Its roots form solid cones, crowned by a luxuriant tuft of spreading leaves and panicles, variable in size, raised upon tall slender culms, the whole plant attaining frequently the height of eight feet! These may be well examined elsewhere; the soil beneath the bank is deep and treacherous, clothed towards the hill, even where the shade is constant, with the Chrysosplenia. It is no light labor, nor an attempt unattended by danger, to traverse this bank.

The morass itself, intersected by the narrow stream, whose trembling eddies, like footsteps scarce heard, break softly the calm repose of the spot, represents the bed of a confined lake, whose outlet has been formed, and the bed drained at length, by the action of water upon the sandy banks by which its sides are still surrounded.

The botanist, and the lover of the picturesque, and they frequently are united tastes, will enjoy a peculiar pleasure in the scene, which has, perhaps, too often absorbed time due to more extensive research. This reflection may well apply to the prudence which I professed at the outset; and I will end this detail with two remarks: with the first of which, except in *landscape gardening*, experience is as much at issue, as it silently acquiesces in the truth of the second.

"A large, deep, abrupt break, among easy falls and "swells, seems at best but a piece left unfinished, and "which ought to have been softened: it is not more "natural, because it is more rude."—*Mr. Whateley.*

"It is habitual for a contemplative mind to expe- "rience emotions of awe, confidence, or gratitude, in "sublime, cheerful, or severe scenes. The source of "these emotions is mysterious; they are increased by

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CAREX. Sedge.

"the activity of the mind in *embodying* such images as "these, and are of the same nature, when aroused by "sounds, or by forms of a dissimilar kind. The ex- "istence of Egeria was an ingenious assumption from "the character of her fabled haunt. We cannot blame "the Pagan for peopling nature with an imaginary "race of spirits, while we are so frequently verging "upon the same belief ourselves. 'Did you never ob- "serve (writes Gray) while rocking winds are piping "loud, that *pause*, as the gust is recollecting itself, and "*rising upon the ear in a shrill* and *plaintive* note, "like the swell of an Œolian harp? I do assure you "there is nothing in the world so like the voice of a "spirit."

great pendulous, *pendula*, E. F. n. 427. 23.—p. 5, 6. In woods below the chalk, frequent

Cyperus-like, *Pseudo-cyperus*, E. F. n. 427. 32.—p. 6. In a pond, by the road-side, near Pedlinge. In a pond, Eastwear Bay East.

loose, *distans*, E. F. n. 427. 42.—p. 5, 6. Upon moist clay near the sea, and inland; between Folkstone and Sandgate; very large in dykes near Sandwich: by rivulets upon Broadmead, &c.

slender-beaked Flask, *ampullacea*, E. F. n. 427. 57.—p. 5, 6. By the side of a ditch at the foot of Cæsar's Camp, near Folkstone.

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## Order III. *TETRANDRIA.*

LITTORELLA. Shore-weed.

Plantain, *lacustris*, E. F. n. 429. 1.—p. 6. Upon the bank and the sides of the Baptist Pond, Brabourne Leas.

The leaves of the Brabourne plant are tufted margi-

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LITTORELLA. Shore-weed.

nally with short, blunt, jointed, hair: the stalks bear, rarely, two flowers; and, in *no instance* that I have examined, is the elevated flower destitute of an abortive *germen* and *style*; such as are represented in *Flora Danica*, Vol. I. t. 160. These have surely escaped general notice; though Dillenius figures the *fruit* in *Historia Muscorum* t. 81. d. d: for I know not what else to make of that figure. Linnæus in his *Mantissa* p. 295, observes of Littorella, which he once considered Plantago, and named P. uniflora, *Sp. Plant*, 167. "The sex and principally the fruit appear to distinguish this genus from Plantago, should the fruit not turn out to be a bulb." He had before considered "the flower related to Plantago, but the fruit alien to it." p. 161. The doubtful bulb at the root, when in embryo, closely resembles the abortive germen. The barren flower may, as many plants of these classes prove, produce fruit occasionally. Littorella is closely allied in habit to Plantago Cretica, figured in *Flora Græca:* and might well be removed to that genus, presenting while attached to Monœcia an instance of, I think, unnecessary violence in enforcing the law which Linnæus founded, in a case which in his own opinion did not wholly fall within the meaning of that law.

URTICA. Nettle.

Roman, *pilulifera*, E. F. n. 432. 1.—a. 6, 7. "*Parkinson* "saith it hath been found growing of old at Lidde, by "Romney, and in the streets of Romney, in Kent." *Ray, Syn.* p. 140. I cannot now meet with this plant near either place.



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### Order VI. *POLYANDRIA.*

CERATOPHYLLUM. Hornwort.

unarmed, ***submersum***, E. F. n. 437. 2.—p. 9. Floating with the tide, this plant is frequently washed up upon the coast; its place of growth is, however, unknown.

MYRIOPHYLLUM. Water Millefoil.

whorled, ***verticillatum***, E. F. n. 438. 2.—p. 7. In several places in Romney Marsh.—*Bot. Guide.*

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## Class XXII. DIŒCIA.

### Order III. *TETRANDRIA.*

HIPPOPHÄE. Sallow-thorn.

sea, ***rhamnoides***, E. F. n. 452. 1.—p. 4. Below the Church at Folkstone, upon the Green Sand: upon the chalk, at Lydden Spout. Upon sand, east of Deal.

---

### Order VII. *ENNEANDRIA.*

MERCURIALIS. Mercury.

annual, ***annua***, E. F. n. 458. 2.—a. 5—9. Upon the coast, in waste ground, abundant.

---

## Class XXIII. POLYGAMIA.

### Order I. *MONŒCIA.*

ATRIPLEX. Orache.

shrubby, ***portulacoides***, E. F. n. 462. 1.—p. 7, 8. Upon salt-

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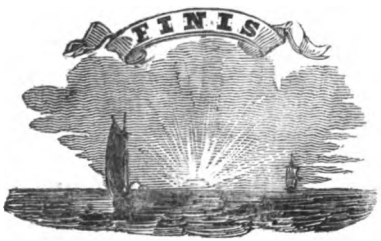
ATRIPLEX. Orache.

marshes; Pegwell Bay-marsh, abundant. A very variable as well as beautiful plant, thriving in a garden.

grass-leaved sea, *littoralis*, E. F. n. 462. 6.—a. 6, 7. Upon the salt-marshes east of Sandwich; about New Romney, &c.

stalked, *pedunculata*, E. F. n. 462. 7.—a. 6, 7. Dwarf or luxuriant, in proportion to the dry or sandy, or inundated salt-marsh upon which it occurs. Between Sandwich and Pegwell, frequent. Observed there by Dr. Sherard.




" MEMINISSE JUVABIT."

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# NOTES.

Note to *Rosa rubiginosa*, page 28.

I cannot resist adding the translation of a passage, which has this moment fallen in my way, respecting the cultivated varieties of the Rose. The French names are not translated, that they may be compared with our own.

" M. Desportes divides into eleven tribes the seventy-nine recognised species " of Rose, natives of France; adding a separate list of eleven doubtful species " and their varieties. The number of named varieties amounts to 2533, very " unequally distributed among the species, of which an instance is given in the " accompanying list of favorite species, and their respective varieties.

| *Espèces.* | *Variétés.* |
|---|---|
| Rosier mousseux . . . . . | 18 |
| —— des Chiens . . . . . | 20 |
| —— des Alpes . . . . . | 21 |
| —— de Francfort . . . . . | 39 |
| —— thé . . . . . | 42 |
| —— rubigineux . . . . . | 57 |
| —— noisette . . . . . | 89 |
| —— de Damas . . . . . | 117 |
| —— cent feuilles . . . . . | 121 |
| —— pimprenelle . . . . . | 123 |
| —— blanc . . . . . | 125 |
| —— de Bengale . . . . . | 254 |
| —— de Provins . . . . . | 1215 |

" The Provence Rose would fill the largest garden with its varieties alone."

*Revue Encyclopedique, Tome III, p.* 438.

Note to *Didynamia Angiospermia*, page 35.

DIGITALIS. Fox-glove.

purple, *purpurea*, E. F. n. 311. 1.—p. 6, 7.

This plant is rare near the coast: it grew upon the bank beneath the fir-trees upon the Camp-ground, but I have not seen

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it there this year. A white variety was brought to me, but I know not whence. Inland, in woods upon the chalk, it is locally abundant.

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Note to *Trifolium suffocatum*, p. 40.

This is in fact true of the seeds of the great majority of plants. Few, however, of the phænogamous tribes exhibit such a tendency to avoid the atmosphere, or endure immersion in the earth without injury to their immature seeds, or without forming radicles at the joints, or upon the surface, of their stems.

---

Note to *Ophrys fucifera*, p. 51.

The frequent examination of plants can alone guard us against error, and establish the physiological truths which we are too apt to adopt without sufficient authority. The most familiar acquaintance with individual plants, as with persons, will not always supply us with that certainty in regard to the character, which is gained by comparison alone. This habitual and prudent exercise of discrimination has formed the excellence of master-minds in science; it is obviously a habit which few have possessed in perfection; and while it guards against prejudice, it adorns the character with a submissive modesty, in no one so conspicuous as in Linnæus. "If you have remarked errors in me, "your superior wisdom must pardon them. Who errs not, while perambulat- "ing the domains of nature? Who could observe every thing with accuracy? "correct me as a friend, and I will as a friend requite the kindness." *Linnæus in a letter to Haller.*

To the inexperienced botanist, whose love of plants, and zeal for science, have led him to embody the brief and imperfect records of his rambles, the indulgence, which even the great Linnæus claimed, will not be denied: nor will it be deemed presumption, that he has placed the united initials of his countryman, Ray, and of the illustrious Swede, within his own symbol. They rest there, as bright gems within an humble clasp: may their light and purity long attend the devoted follower of their footsteps. Their light is mutual; let them blend their rays together. The diamonds of the east and west shine side by side: Science derives her greatest splendor from the united genius of ages.

"Naturæ planè sunt inexhaustæ divitiæ, nec cuiquam post mille secula nato "deerit quod scrutetur, et in quo se cum laude exerceat."

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| Navel wort | 27 |


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| ——— dead | 65 |
| Nightshade | |
| ——— Enchanter's | 1 |
| ——— deadly | 15 |
| Oat | 6 |
| Orache | 67 |
| Orchis | 50 |
| ——— butterfly | 47 |
| ——— bog | 59 |
| ——— insect | 52 |
| ——— man | 51 |
| ——— musk | 51 |
| Orpine | 27 |
| Parsnep | 17 |
| Pea | 39 |
| Periwinkle | 15 |
| Persicaria | 14, 24 |
| Pimpernel | 14 |
| Pink | 25 |
| Plantain water | 23 |
| Purslane | 23 |
| —— water | 8 |
| Pondweed | |
| —— tassel | 9 |
| —— horned | 60 |
| Poppy | 29 |
| ——— horned | 29 |
| Rose | 28 |
| Red rattle | 34 |
| Rest harrow | 39 |
| Reed | |
| —— common | 7 |
| —— mace | 60 |
| —— bur | 60 |
| Rush club } | 4 |
| —— bull } | |
| —— wood | 21 |
| —— flowering | 25 |
| —— twig | 2 |
| —— true | 22 |
| Sampire | |
| ——— sea | 17 |
| ——— marsh | 1 |
| Sandwort | 27 |
| Saxifrage golden | 25 |
| Scabious, sheep's | 14 |
| Sea rocket | 36 |
| Sedge | 60 |
| Self heal | 32 |
| Shepherd's staff | 8 |
| ——— purse | 36 |
| Sheep bit | 4 |
| Skull cap | 32 |
| Snakeweed | 24 |
| Soapwort | 25 |
| Solomon's seal | 22 |
| Speedwell | 2 |
| Shoreweed | 64 |
| Spurge | 59 |
| Spurrey | 27 |
| Starwort, water | 1 |
| Stork's bill | 37 |
| St. John's wort | 45 |
| Sundew | 20 |
| Tamarisk | 17 |
| Teasel | 8 |
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| Thrift | 18 |
| Thyme | 32 |
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| Toothwort | 33 |
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| Vetchling | 39 |
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| Woundwort | 31 |
| Yellow-wort | 23 |


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## EXPLANATION OF THE PLATES.

PLATE I.—*Fig.* 1. Ruppia maritima. *a.* the flowers elevated above the water; *b.* germs and young capsules; *c.* the bursting anther; *d.* the anther as represented in *Flora Londinensis.*

2. Littorella lacustris. *a.* radical germ and style; *b.* germ of the barren flower magnified; *c.* germ and reflexed corolla of the barren flower as represented in *Flora Danica; d.* the trailing runner of the plant.

3. Five-divided flower of Paris quadrifolia. *a.* unequal sided seed-vessel; *b.* section of the same.

4. Medicago denticulata. *a.* magnified legume of the plant.

PLATE II.—*Fig.* 1. Reduced figure of Statice Limonium. 2. of S. cordata; 3. leaf of S. Limonium; 4. of S. cordata. 5. the calyx and floral bracteæ of fig. 1.; 6. calyx and corolla of fig. 2, shewing the emarginate petals; 7. a group of flowers of S. cordata.

PLATE III.—*Fig.* 1. Lathræa squamaria *β.* 2. *a. b.* corolla, calyx, and bractea of L. squamaria, copied, with *c.* the style and germ, from *English Botany.* 3. *a.* upper lip of L. of Kent; *b. c.* style, germ, calyx, and nectary of the same plant. 4. *a.* Style, stamens and germ; *b.* separate style; c. stamen; *d.* calyx of Orobanche caryophyllacea; *e.* section of the stem of the same plant.

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PLATE IV.—*Fig.* 1. Flower of Habenaria bifolia. 2. Anther-lobe and its pouch. 3. Anther-lobe and terminal scale. 4. Proliferous flower deprived of its central florets. 5. A single floret. 6. Ditto. 7. Terminal flower of the spike. 8. Staminal of Orchis morio. 9. Flower of Ophrys muscifera. 10. of the Ophrys apifera of *English Botany*, t. 383. 11. of Ophrys apifera of Kent. 12. Flowers of Aceras anthropophora, taken from *Rudbeck Campi Elysii*, 193. 6. 13. of Ophrys aranifera. 14. of O. fucifera. 15. of ditto, from *Rudbeck*, 205. f. 25. 16. Monstrous flower of O. fucifera. 17. Ditto. 18. Flower of Ophrys arachnites. 19. Ditto. 20. Ditto.

PLATE V. *Fig.* 1. Variety of Ophrys fucifera. 2. Variety of O. arachnites.

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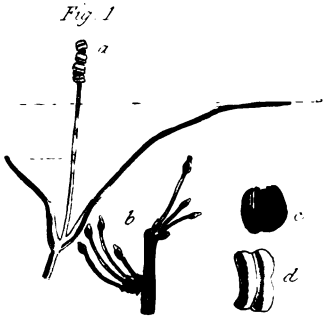


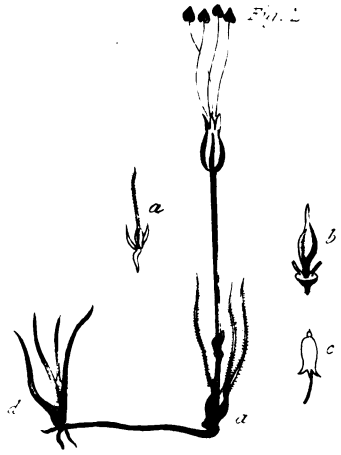

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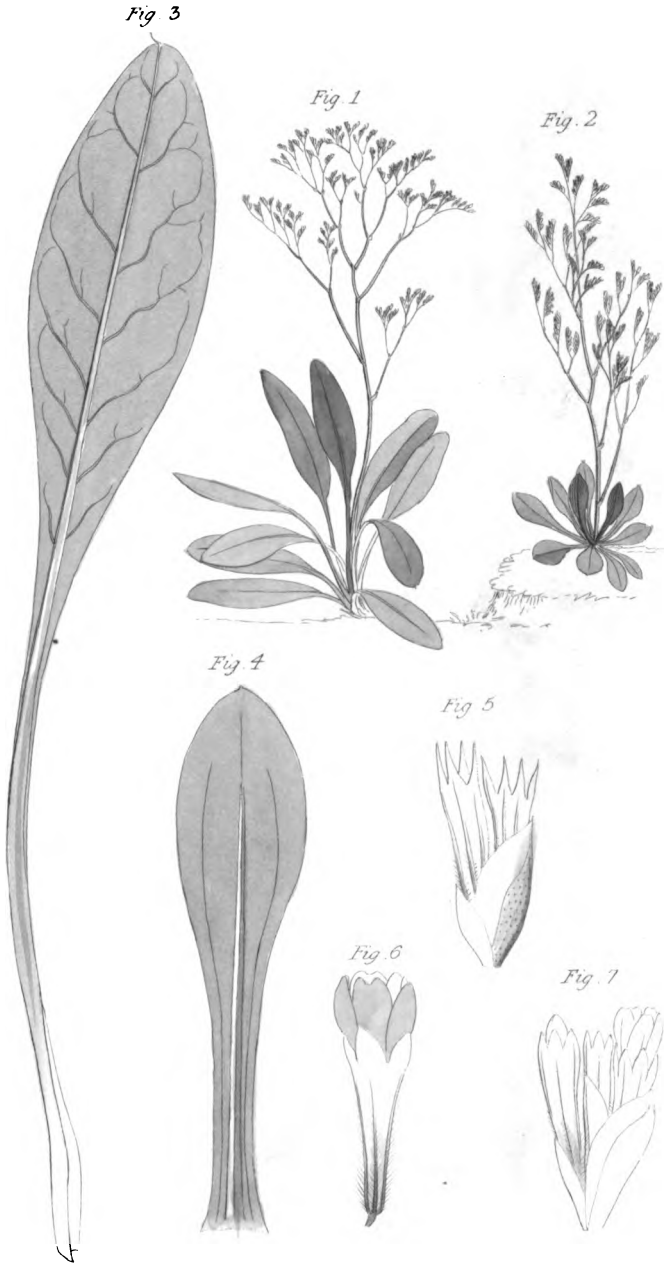


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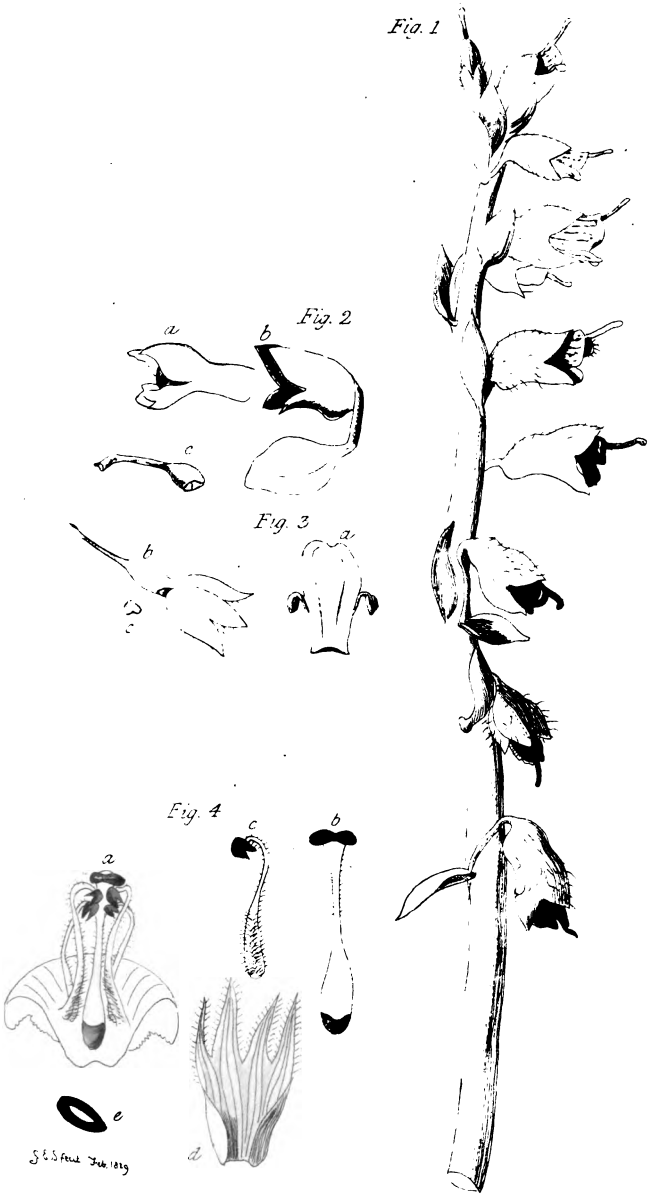


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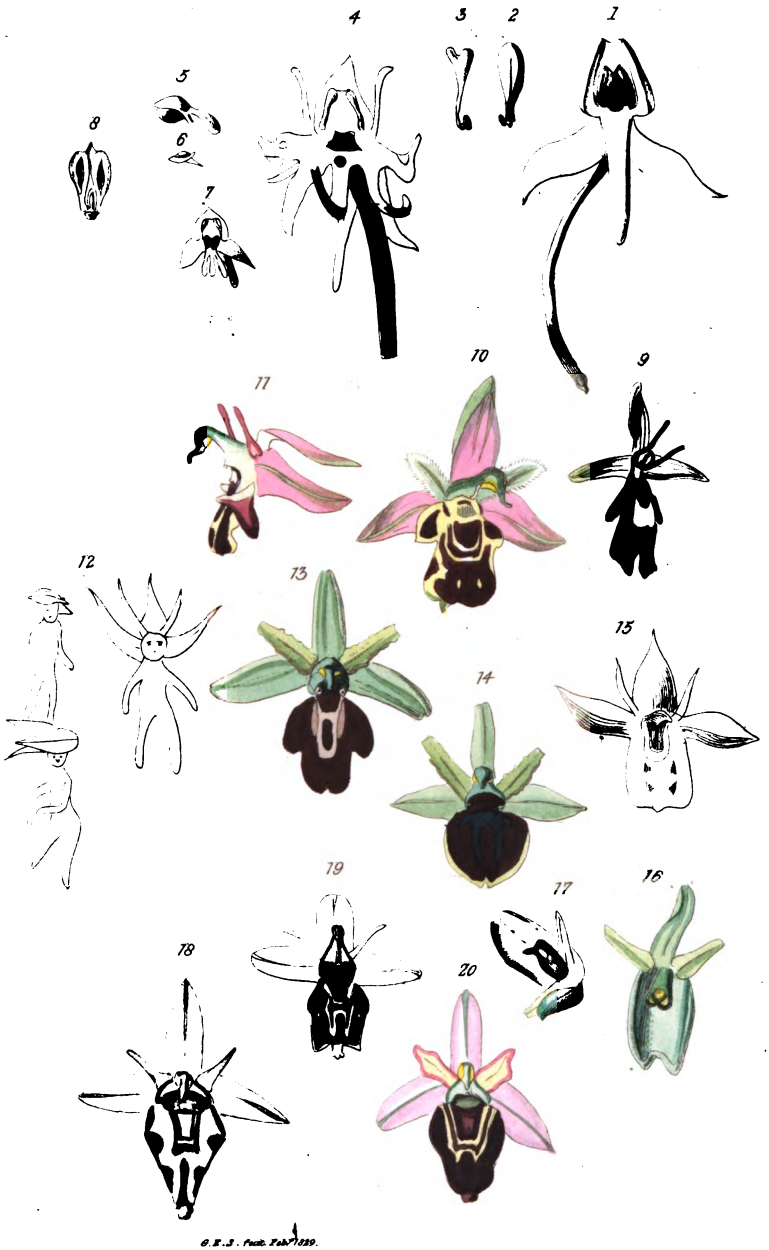


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Fig 1

Fig 2

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## ERRATA.

p. 6, line 7.—for *strictus* read *stricta.*
p. 30, — 3.—for *lutia* read *lutea.*
p. 32, — 6.—for *Mareubium* read *Marrubium.*
p. 34, —10.—for *Phyteuna* read *Phyteuma.*
p. 40, — 7.—for *Astragulus* read *Astragalus.*
p. 49.————for *fig.* 1, *b. b.* read *fig.* 4.
for *fig.* 3. *a.* read *fig.* 5, 7.
for *fig.* 4. read *fig.* 6.
pp. 53, 54, 56, for *Ospringe* read *Hartlep.*

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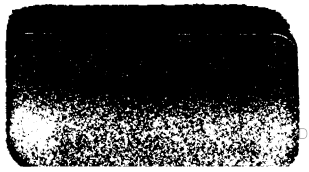

HOLZER BINDER BOSTON MASS

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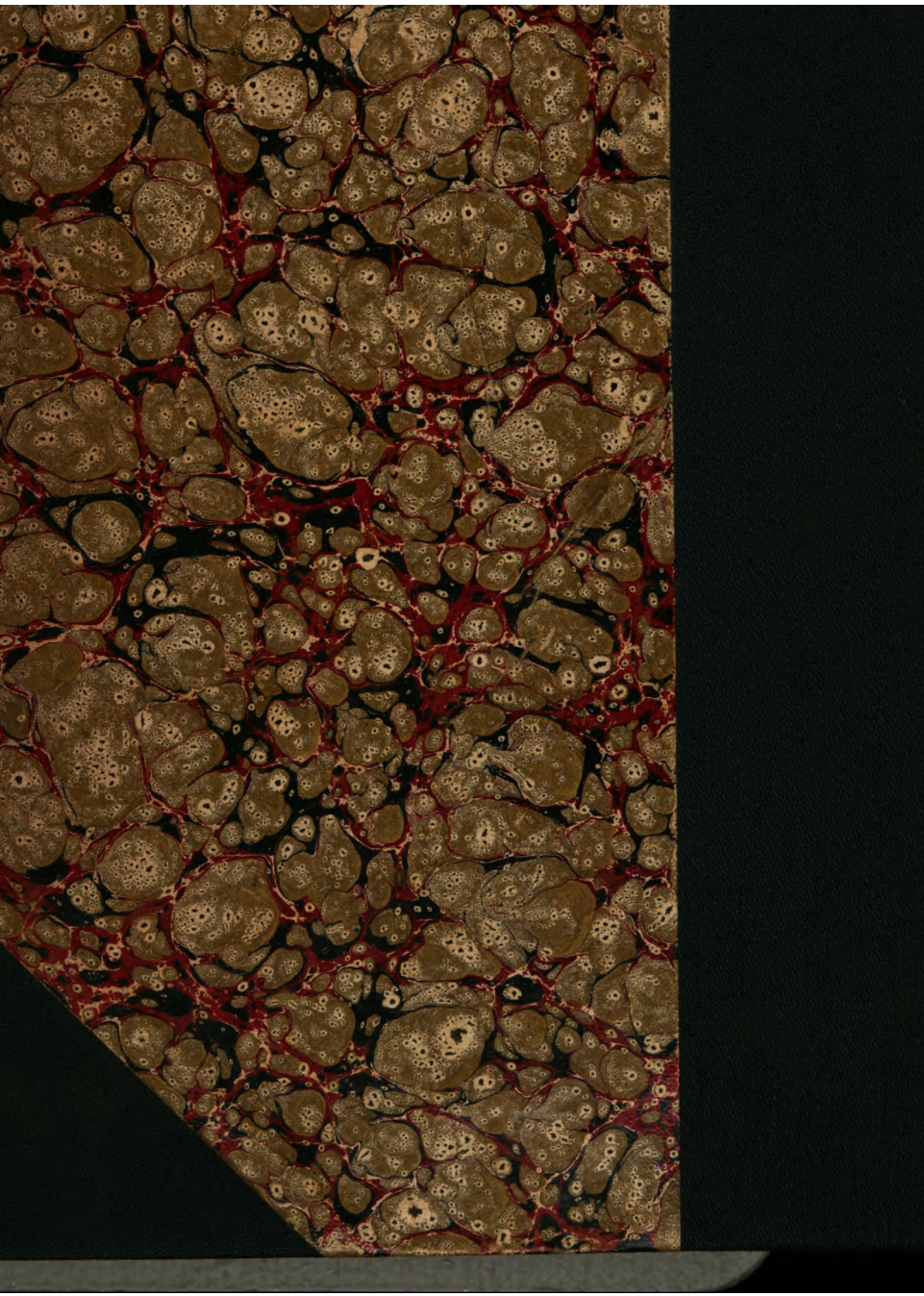

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